

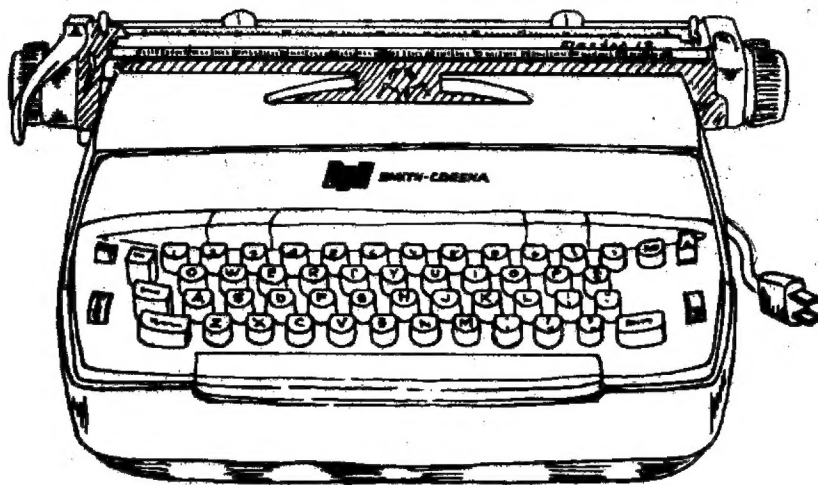
**SMITH-CORONA**

**6 SERIES**

*Electric*

**PORTABLE TYPEWRITER**

AND



***Electra 12***

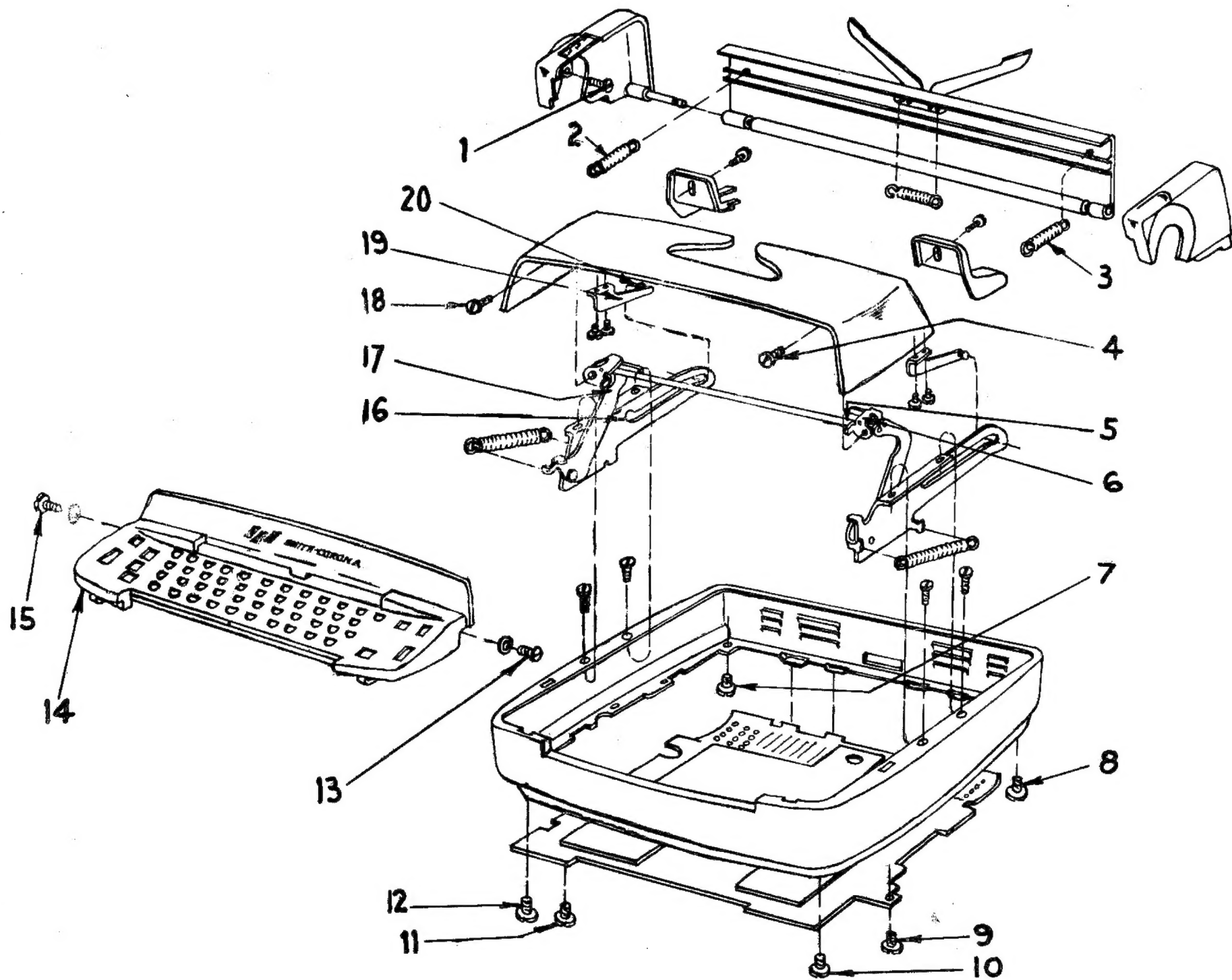
**SERVICE MANUAL**

LIMITED PUBLICATION PRICE \$25.00

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ATHEY ASSOCIATES  
TARENTUM PENNSYLVANIA



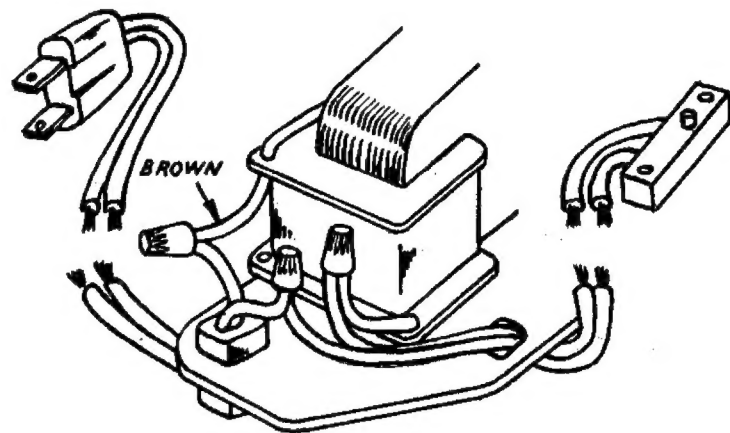
### CASING REMOVAL

1. Remove Cover Plate Screws (4) and (18), slide Cover Plate forward so Cover Plate Bracket Rivet (20) lines up with the HOLE (16) in the Cover Plate Torsion Arm Bracket and lift out.
2. Remove Screws (13) and (15). Lift off Keylever Mask (14).
3. Remove Screws (9) and (11). Lift off Casing Base.
4. Remove machine Casing Screws (7), (8), (10), and (12). Place machine on its back, lift up carriage to release machine Back Frame from Casing Assembly. Lift off Casing Assembly.
5. Remove Screw (1), turn back LEFT AND RIGHT CARRIAGE END COVER, unhook springs (2) and (3). Lift off Carriage Back Assembly.

### REVERSE PROCEDURE FOR REPLACEMENT

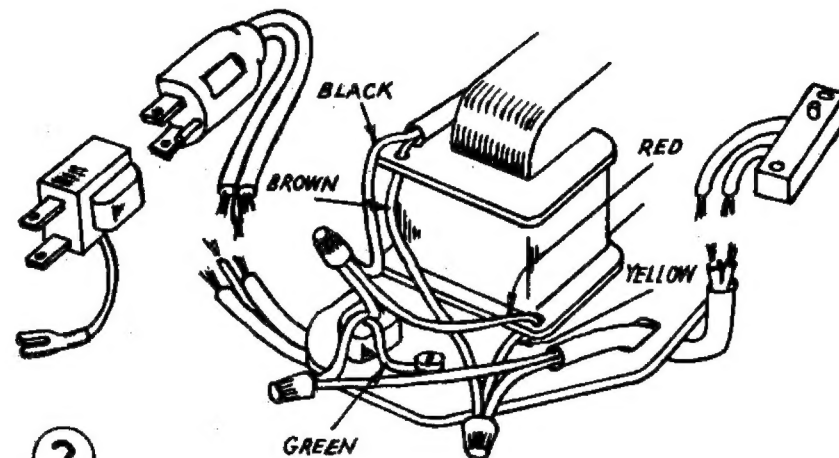
### ADJUSTMENTS

1. KEYLEVER MASK may be relocated for clearance with Key Buttons by loosening SCREWS (13) and (15).
2. Adjust TORSION ARM ASSEMBLY at (17) to clear Variable Pulley.
3. Space Bar must be adjusted in KEYLEVER MASK so it will restore properly.
4. To raise COVER PLATE FRONT, place Screw Driver between Torsion Bar (5) and COVER PLATE SCREW BRACKET and raise UP. To LOWER, use Twister at (6), bend down.
5. To raise COVER PLATE REAR adjust ARM (19) down, reverse to lower.



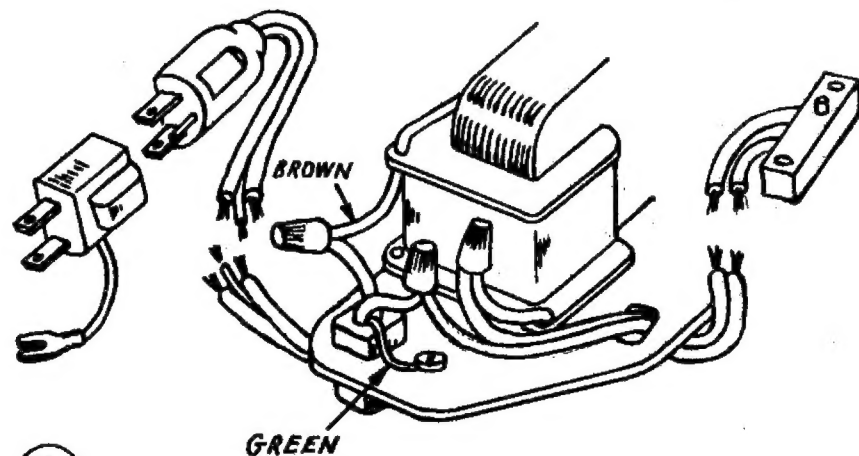
①

117 VOLT - 60 CYCLE - AC



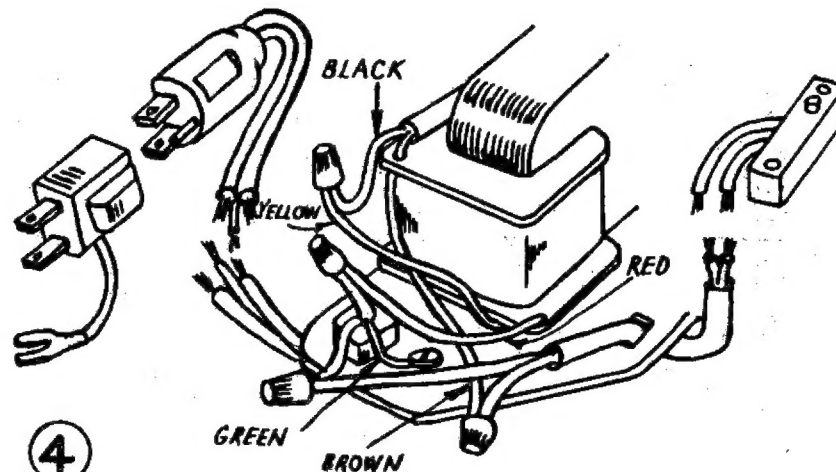
②

117 VOLT - 50 CYCLE - 3 WIRE CORD



③

3 WIRE CORD



④

234 VOLT - 50 CYCLE - 3 WIRE CORD

## WIRING

Wire as illustrated for 117 volt 60 cycle A.C. current.

Figures (2) and (4) illustrate wiring 437080-30 motor, which is a duo purpose motor and may be wired two ways, for 117 volt 50 cycle or 234 volt 50 cycle. When converting 60 cycle motors to 50 cycle, it is also necessary to use either clutch pulley 439090-01 or 439120-01 which are designed for 50 cycle current and pulley pivot arm spring, part number 439360.

All motors are available with the 3 wire cord arrangement illustrated in figure 3. This arrangement requires a special motor bracket. Special gauges are used at the factory to mount the motor on the motor bracket. Therefore, machines should be ordered from the factory equipped with a 3 wire cord or the complete motor bracket assembly must be changed.

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## POWER DRIVE

### Clutch-Clutch Pulley

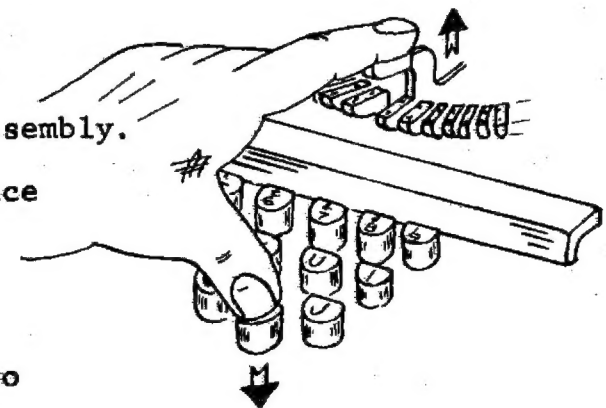
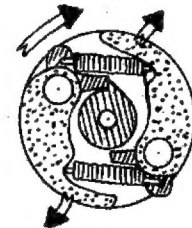
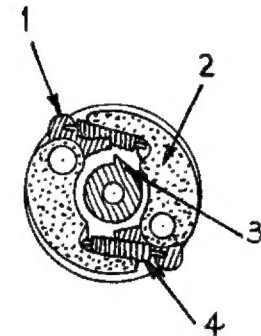
The function of the clutch is to divorce the load from the motor until the running speed is attained. When the speed becomes great enough, centrifugal force causes the two clutch weights to expand against the pressure of the clutch dog springs. Both dogs slip around the clutch pulley tooth until one of the dogs contacts the flat face of the clutch pulley tooth. This engagement delivers full power to the power drive mechanism.

The clutch also serves as a means of preventing damage in the event of type bar jamming or other causes of lock ups. When the motor shaft is slowed down, the clutch dog springs withdraw the dogs and disengagement will continue as long as the lock up is present and the power is turned on.

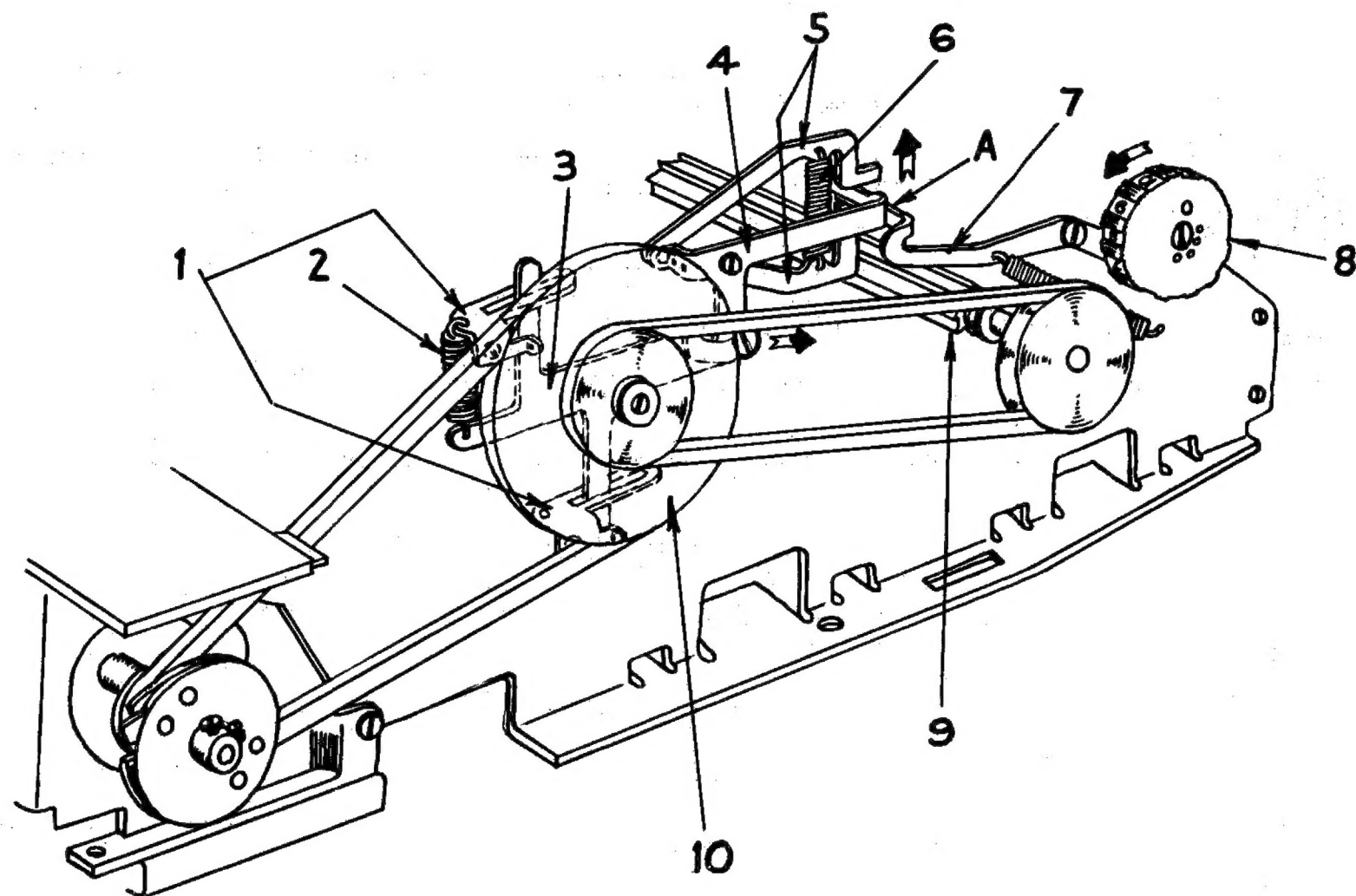
### ADJUSTMENTS

1. Clutch Weights (2) should be free on their pivots. Clutch dogs (1) should be free on the same pivots.
2. Replace Clutch Dog SPRINGS (4) if they are distorted.
3. If CLUTCH DOGS (1) show wear, replace entire clutch plate assembly.
4. If the clutch pulley TOOTH (3) shows wear, or if noisy replace clutch pulley.
5. The Clutch Assembly should be located on rotor shaft with minimum of end play, NOT OVER .005.

Test as illustrated for clutch engagement and disengagement, also belt slippage. If belts slip, replace them.







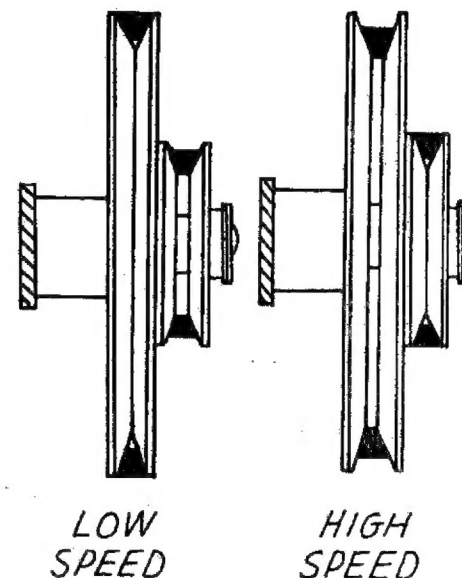
## POWER DRIVE (Con't.)

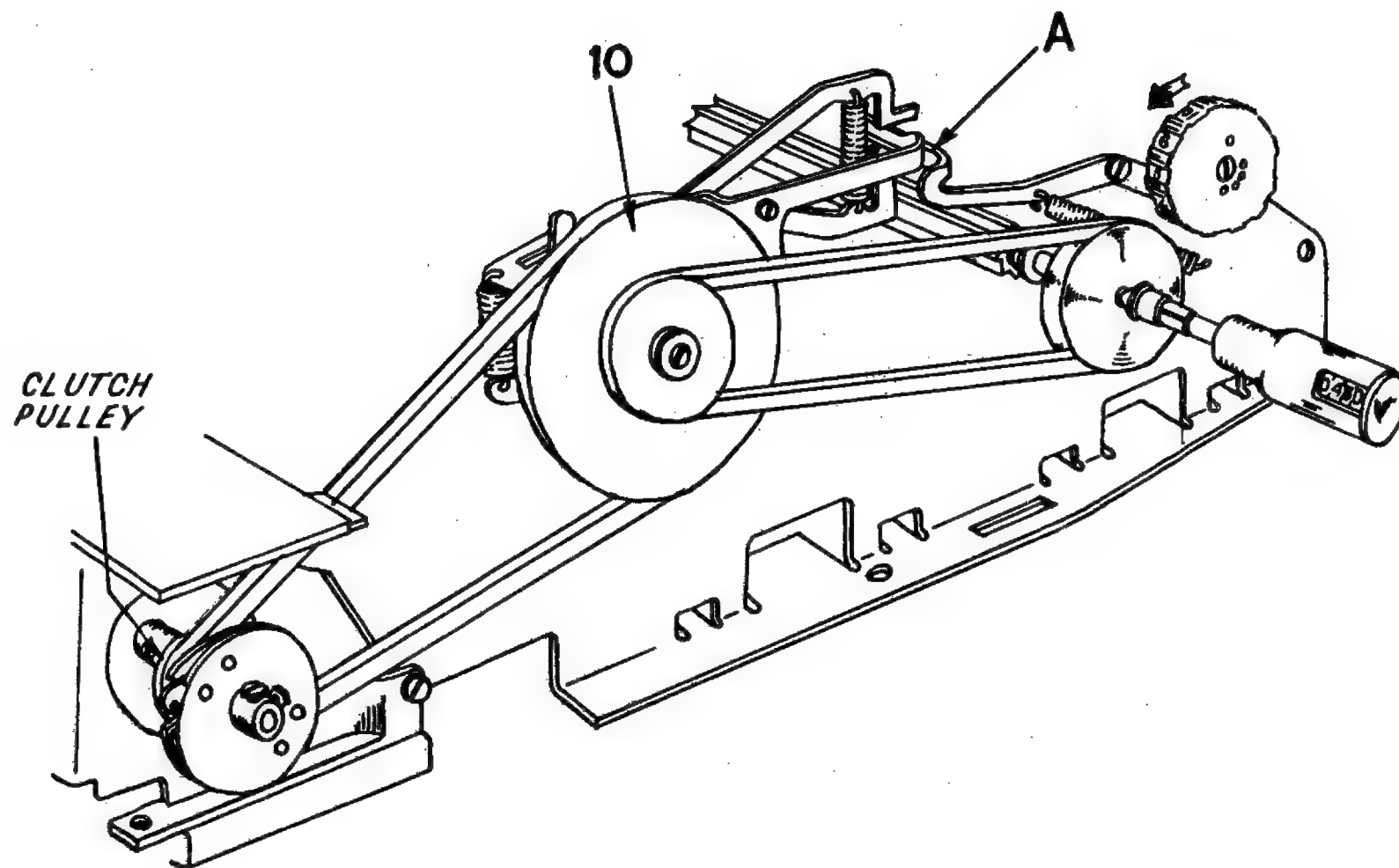
Impression density is controlled by the speed of the POWER ROLL (9). The speed control mechanism consists of the VARIABLE PULLEY (10), PULLEY PIVOT ARM (3), upper and lower PULLEY PIVOT ARM GUIDES (1), SPEED CONTROL CENTERING ARMS BRACKET (4), SPEED CONTROL LEVER CENTERING ARMS (5), SPEED CONTROL LEVER (7) and SPEED CONTROL KNOB (8).

The VARIABLE PULLEY is built as a unit with the two outer sheaves spaced and staked to an oilite bearing. The central double sheave floats freely over the pulley bearing to allow diametrical changes, as illustrated, to take place as it moves forward and to the rear suspended on the PULLEY PIVOT ARM (3), under restrictions of the fixed lengths of the two V belts.

The SPEED CONTROL LEVER CENTERING ARMS (5) are provided to permit changing the setting of the SPEED CONTROL KNOB (8) with power on or off. When the power is on and a change in speed is desired, the upper and lower SPEED CONTROL LEVER CENTERING ARMS (5) follow the SPEED CONTROL LEVER (7).

When power is off, and a change is made in speed settings (for instance a change from 1 to 10 on the Speed Control Knob) the SPEED CONTROL LEVER (7) rises, carrying the upper SPEED CONTROL LEVER CENTERING ARM (5) upward with it. The lower SPEED CONTROL LEVER CENTERING ARM (5) does not follow because the forward end of the SPEED CONTROL CENTERING ARMS BRACKET (4) prevents it from doing so. The SPEED CONTROL LEVER CENTERING ARMS SPRING (6) is therefore extended. When the power is turned on, the VARIABLE PULLEY (10) can then automatically adjust itself to the new position as the SPEED CONTROL LEVER CENTERING ARMS SPRING (6) urges the LOWER CENTERING ARM (5) upward to the limits provided by the SPEED CONTROL LEVER (7).





## POWER DRIVE (con't)

Check Power Roll speed as illustrated.

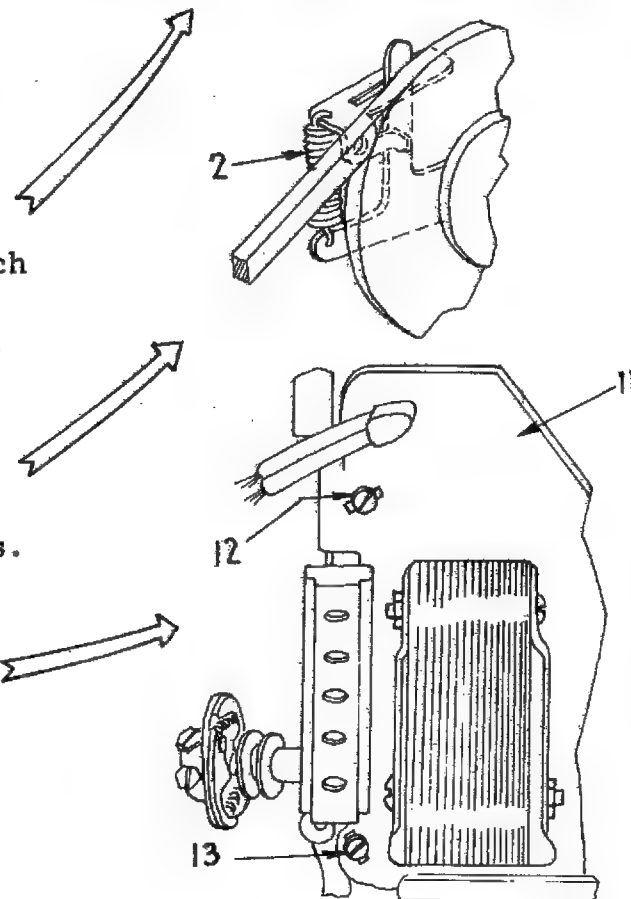
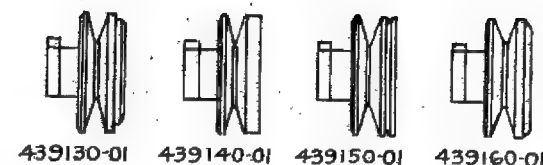
Speed should be set approximately as follows:

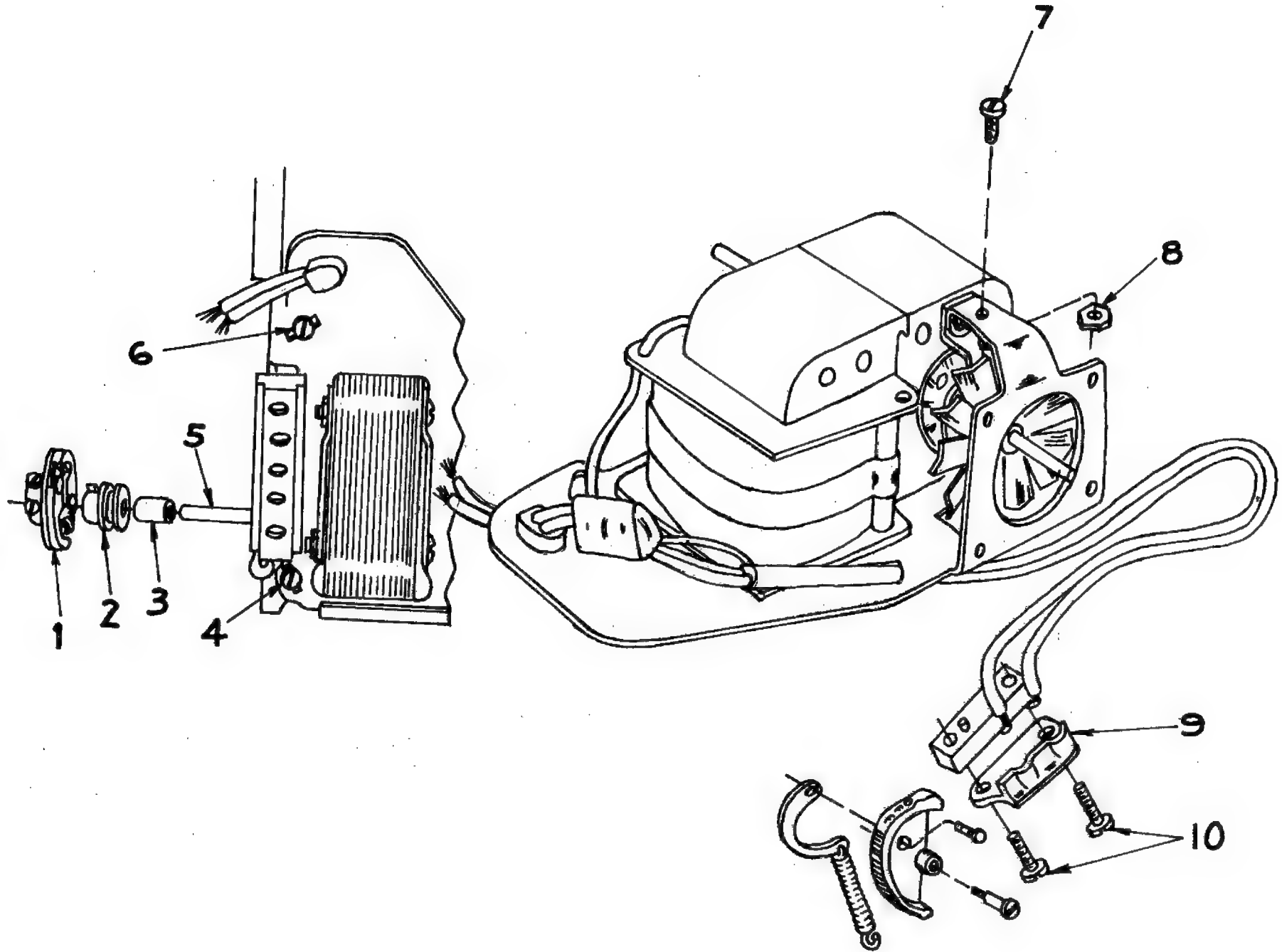
Position 1 - 480-510

Position 10 - 100 RPM increase of Position 1

### ADJUSTMENTS

1. Replace Clutch Pulley 439130-01 with Clutch Pulley 439140-01 to increase Power Roll Speed 15 RPM; Clutch Pulley 439150-01 to increase speed 30 RPM; Clutch Pulley 439160-01 will increase Power Roll speed 45 RPM. A slight increase may be obtained by forming POINT (A) UP slightly.
2. When the Copy Set Dial is set at 1, the tension on the PULLEY PIVOT ARM SPRING (2) should be 12 - 14 ounces. Motor stamped 780 requires less tension. Motor stamped 710 requires more tension or 14 ounces.
3. VARIABLE PULLEY (10) should be adjusted to have approximately 1/8" up play when the speed control dial is set at 1. Rotate MOTOR BRACKET (11) on SCREWS (12) and (13) for this adjustment.
4. For proper contrast there should be at least 100 RPM difference between position 1 and 10. Check contrast after any power drive adjustment or belt change.





## MOTOR REMOVAL

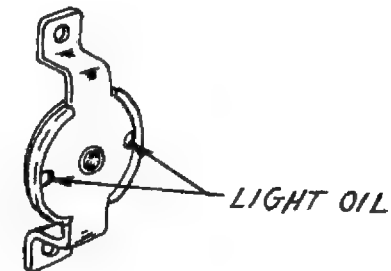
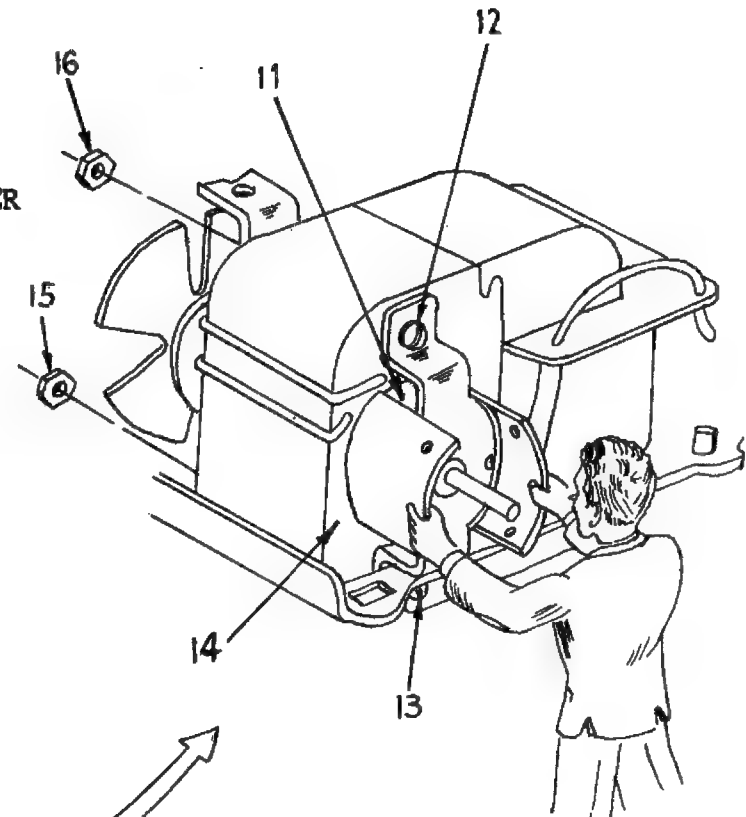
### REMOVE

1. Machine Casing Parts.
2. CLUTCH (1), REAR BELT, CLUTCH PULLEY (2) and OUTER SPACER (3).
3. UPPER MOTOR BRACKET SCREW (7) and NUT (8).
4. Scribe a line around MOTOR BRACKET on machine frame, so motor may be relocated in same position without disturbing V Belt Tension.
5. MOTOR BRACKET SCREWS (4) and (6). Lift out the MOTOR ASSEMBLY.
6. Two SWITCH SCREWS (10) and SWITCH TERMINAL COVER (9).

### REPLACEMENT

Reverse the above procedure for Replacement.

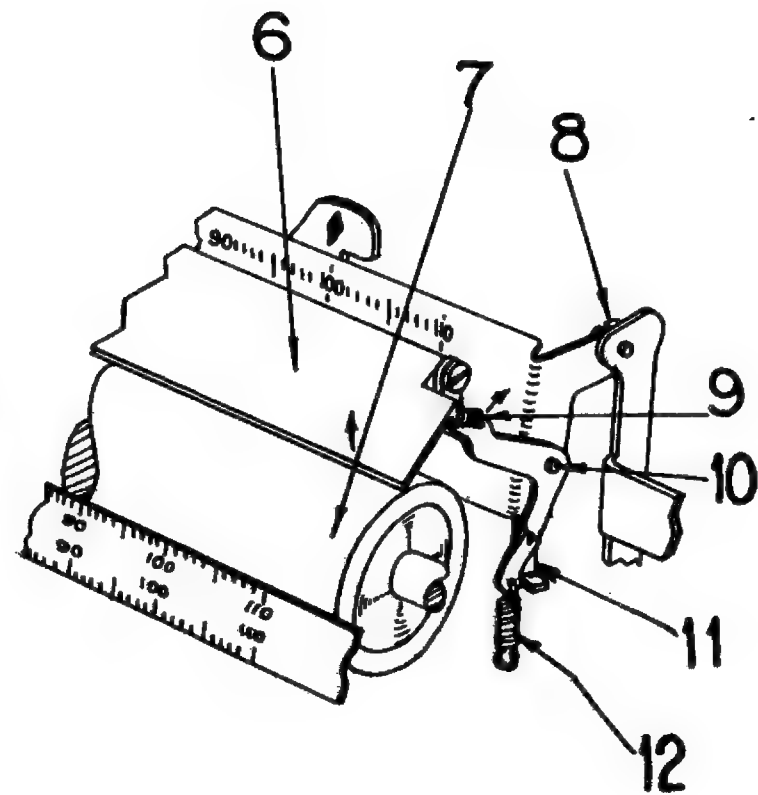
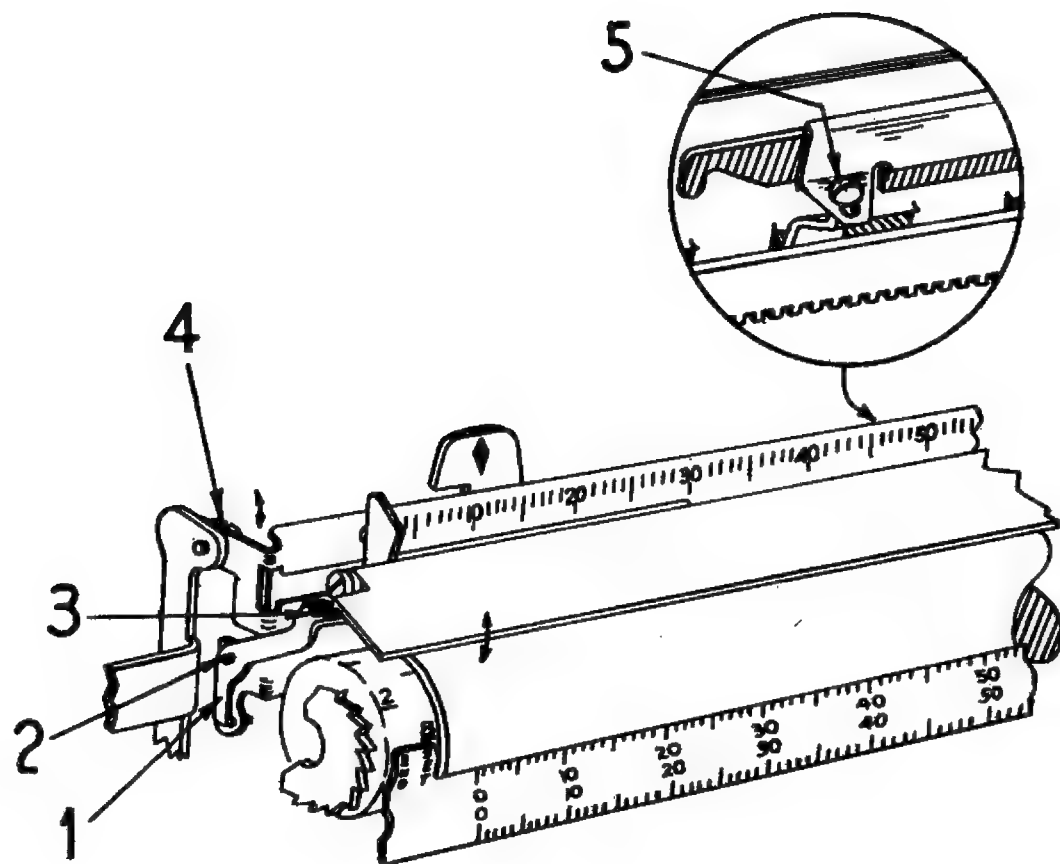
- A. CLUTCH (1) should be free on SHAFT (5) with a minimum of end play, not over .005.
- B. ROTOR SHAFT (5) should be free on MOTOR BEARINGS.
- C. The MOTOR ROTOR (11) should turn freely in MOTOR STATOR (14). If MOTOR ROTOR requires adjustment, loosen SCREWS (12) and (13). Insert SHIMS as illustrated. Tighten SCREWS (12) and (13). See that NUTS (15) and (16) are tight. Remove SHIMS. Use light oil on MOTOR BEARINGS.



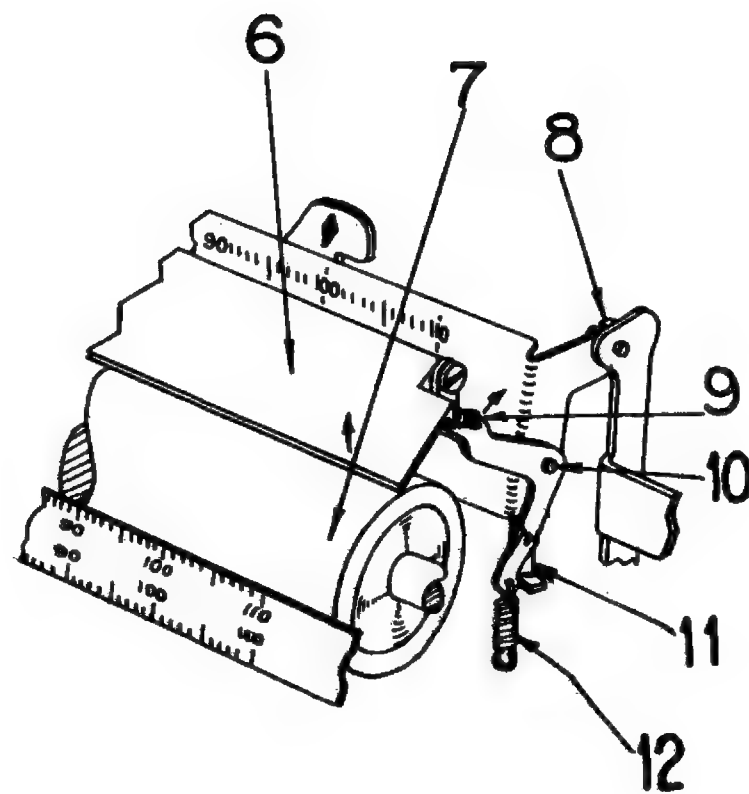
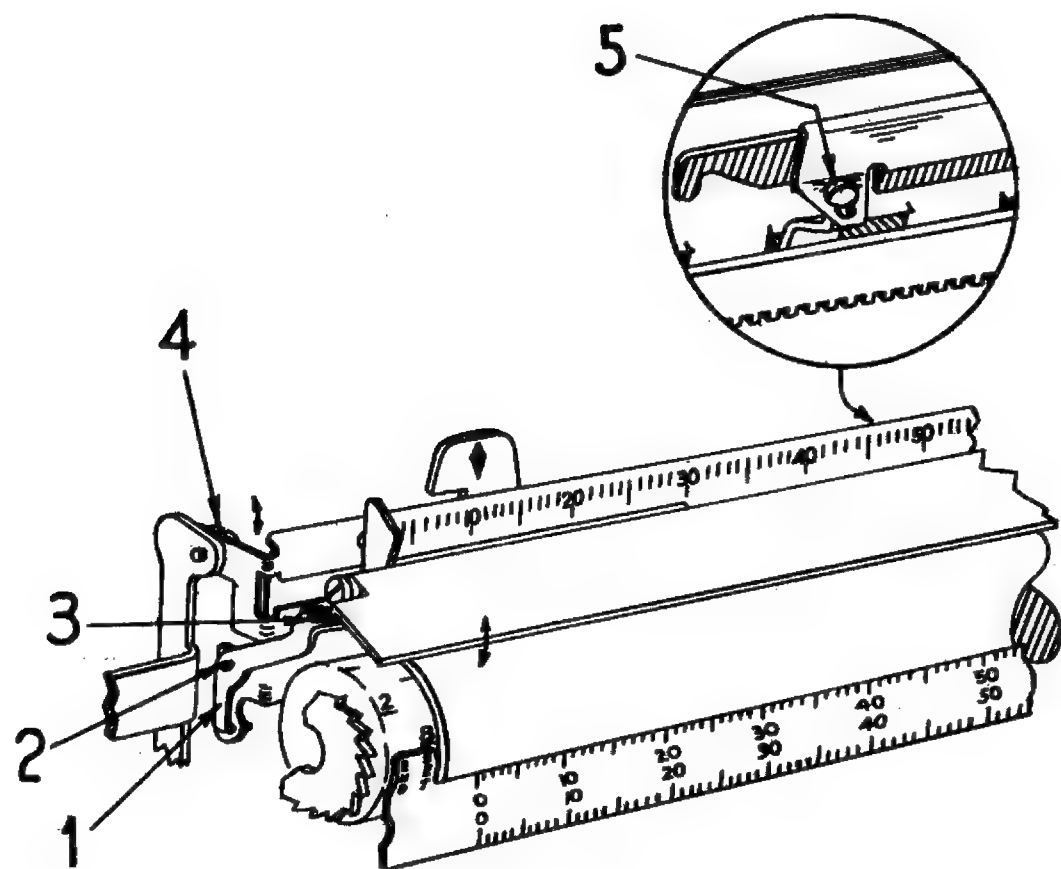
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NOTES:

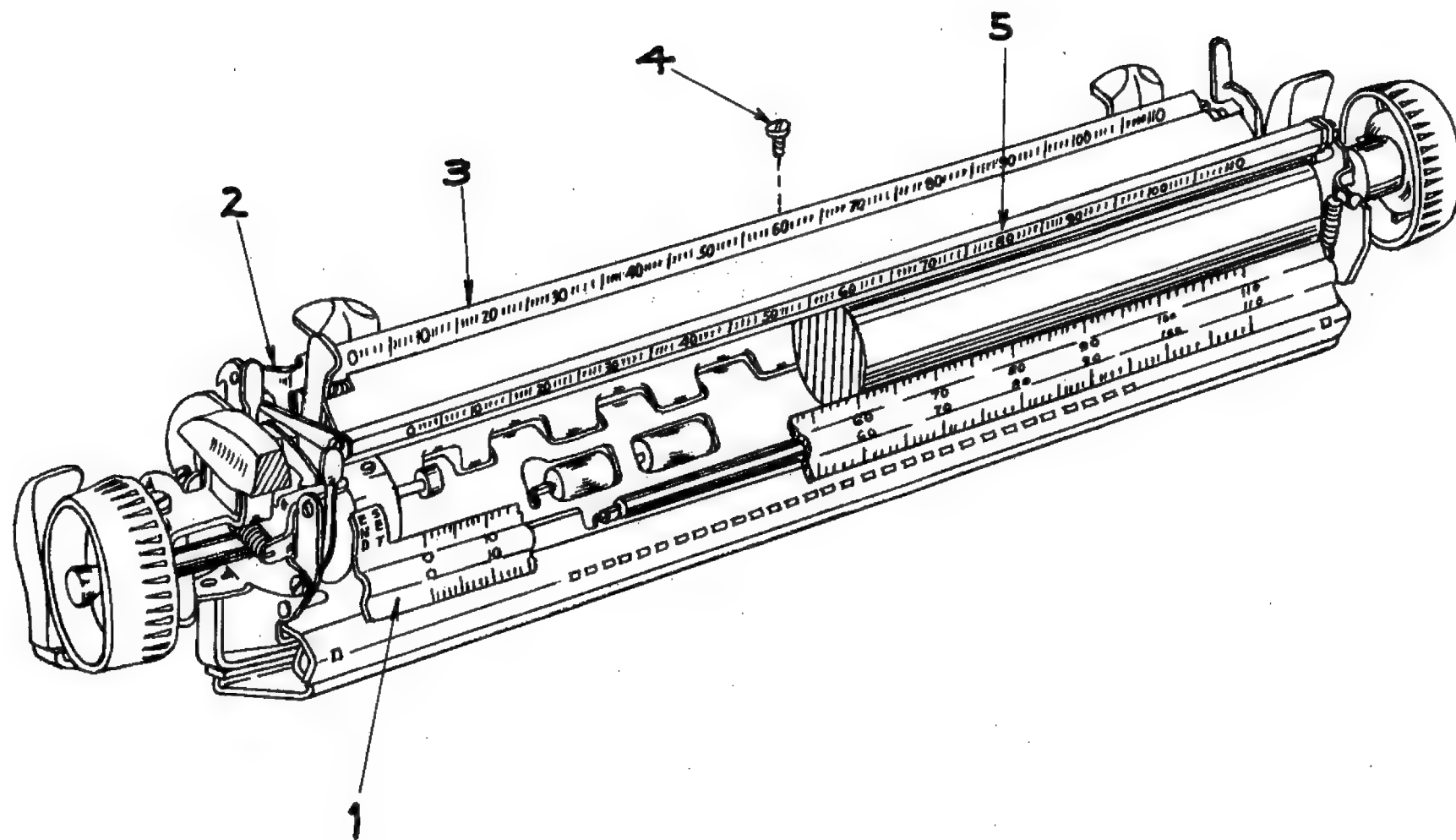


### ERASER TABLE

1. The ERASER TABLE ARMS (1) and (11) are attached to the UPPER PAPER TABLE BY SCREWS (2) and (10). SCREW (2) is a binding screw. SCREW (10) is a shoulder screw which permits the right side of the ERASER TABLE (6) to pivot so the platen can be removed.
2. The two ERASER TABLE SPRINGS (3) and (9) must be hooked from the back of the ERASER TABLE ARMS as illustrated for proper tension. The lower right ERASER TABLE SPRING (12) is attached to the paper release shaft assembly.
3. The ERASER TABLE must be set level on PLATEN (7) and parallel to the PAPER TABLE AND PAPER BAIL. Adjust by loosening center paper TABLE SCREW (5) and relocate the assembly on SCREWS (4) and (8).
4. See that the assembly is free from binds at all pivot points. Adjust stop on paper TABLE at (11), to parallel ERASER TABLE (6) with Upper Table.

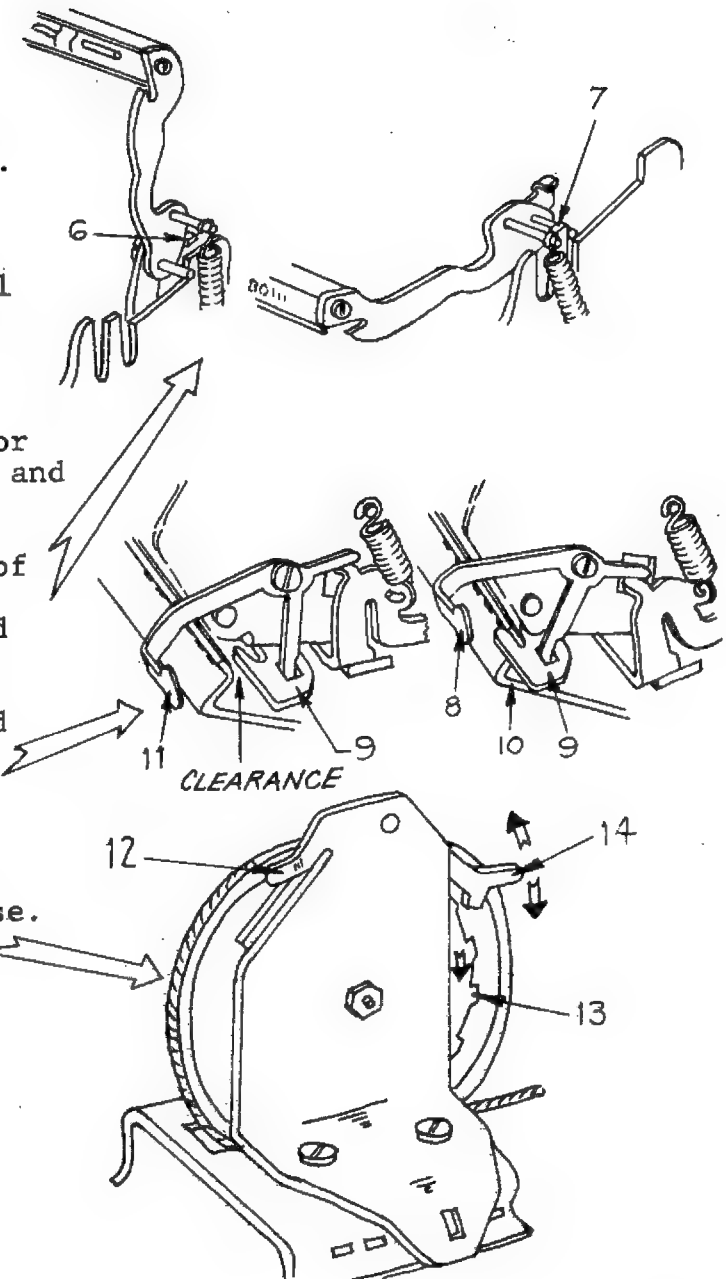
### REMOVAL

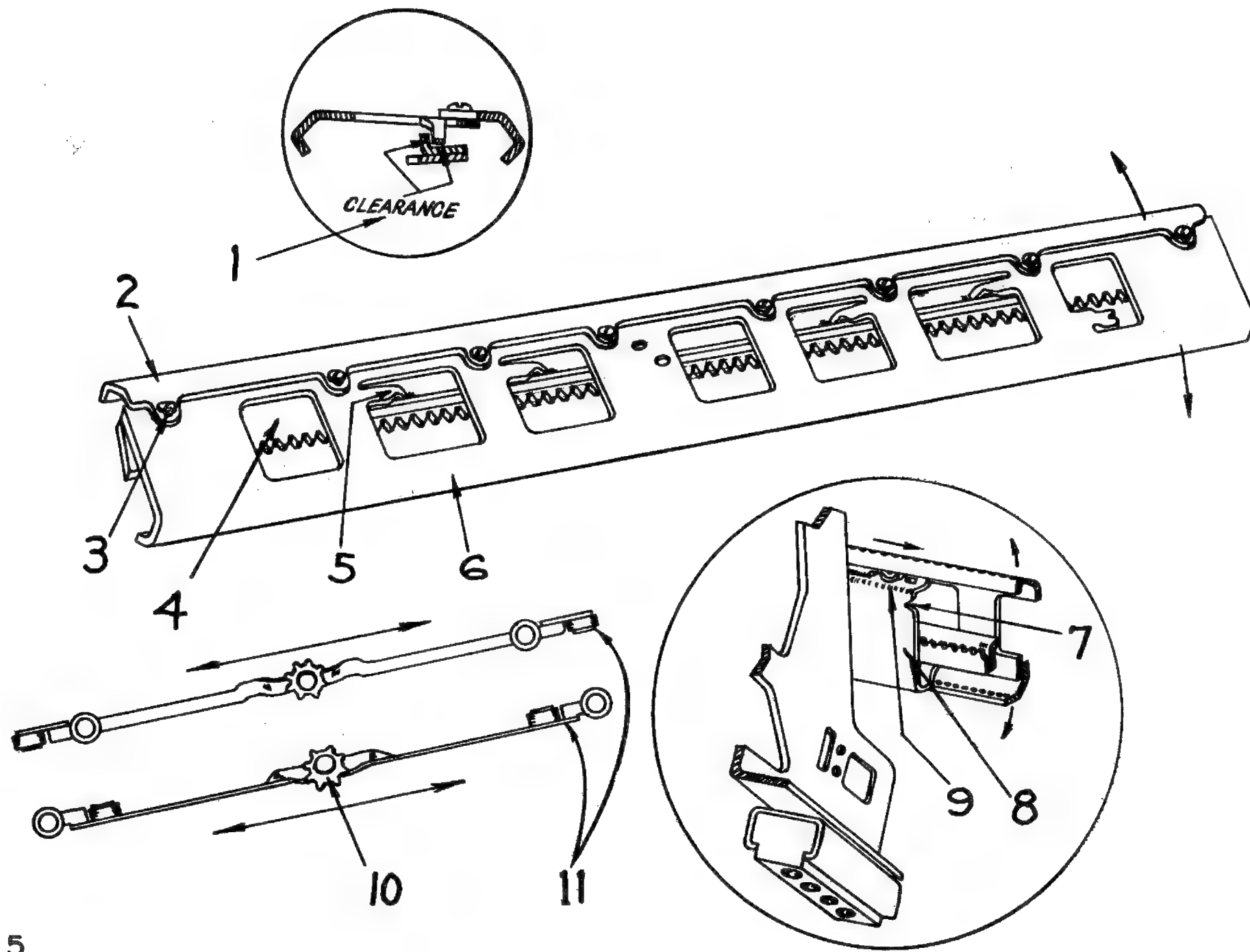
Remove Platen and unhook RIGHT ERASER TABLE ARM SPRING (12) from paper release shaft assembly. Remove three PAPER TABLE SCREWS (4), (5), and (8). Reverse procedure for replacement.



## CARRIAGE

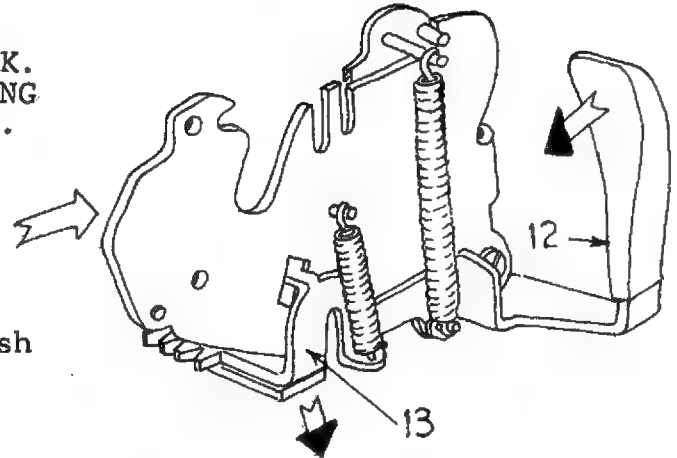
1. Position LEFT MARGIN STOP in third notch of MARGIN ROD. The line on the MARGIN STOP BUTTON should line up with 0 marking on UPPER TABLE (3). To adjust, loosen CENTER SCREW (4) and form PAPER TABLE ARMS (2). Re-tighten SCREW (4). Margin Stop buttons should be equal distance from PAPER TABLE and should have .030-.050 clearance.
2. Set Left Margin Stop at 20. Strike the letter N at both ends of the platen and at 20. Adjust SCALE (1) for height and so it is centered with the letter N. SCALE and LINE INDICATOR should have .030 clearance from Platen.
3. Paper BAIL (5) should have equal tension on both ends of the Platen. Adjust STOP (6) so bail holds in upright position. ADJUST STOP (7) so bail will hold in forward position.
4. Adjust ESCAPEMENT THROWOUT (9) so when (8) is in raised position the SLOT is in line with CARRIAGE PLATE (10). In rest POSITION (11) it should be free enough to drop by its own weight and clear CARRIAGE BED PLATE (10).
5. Spring Drum Tension should be 29 ounces. To increase tension straighten LOCK ARM (12), RATCHET (13) clockwise. To reduce tension PIVOT (14). Form LOCK ARM (12) to locked position.





## 12" CARRIAGE ADJUSTMENTS

1. Adjust four ADJUSTING STOPS (5) to control carriage RACK. There should be some clearance between RACK and ADJUSTING STOPS as illustrated (1), so RACK will restore properly. Use Pliers for horizontal adjustment on lugs, Wrench #52008 for vertical adjustment.
2. Adjust CARRIAGE RELEASE LEVERS (12) at (13) as close to the CARRIAGE END as possible and still function freely.
3. RACK (4) should be parallel at each end and have 3/4 mesh with ESCAPEMENT PINION.



## CARRIAGE FITTING

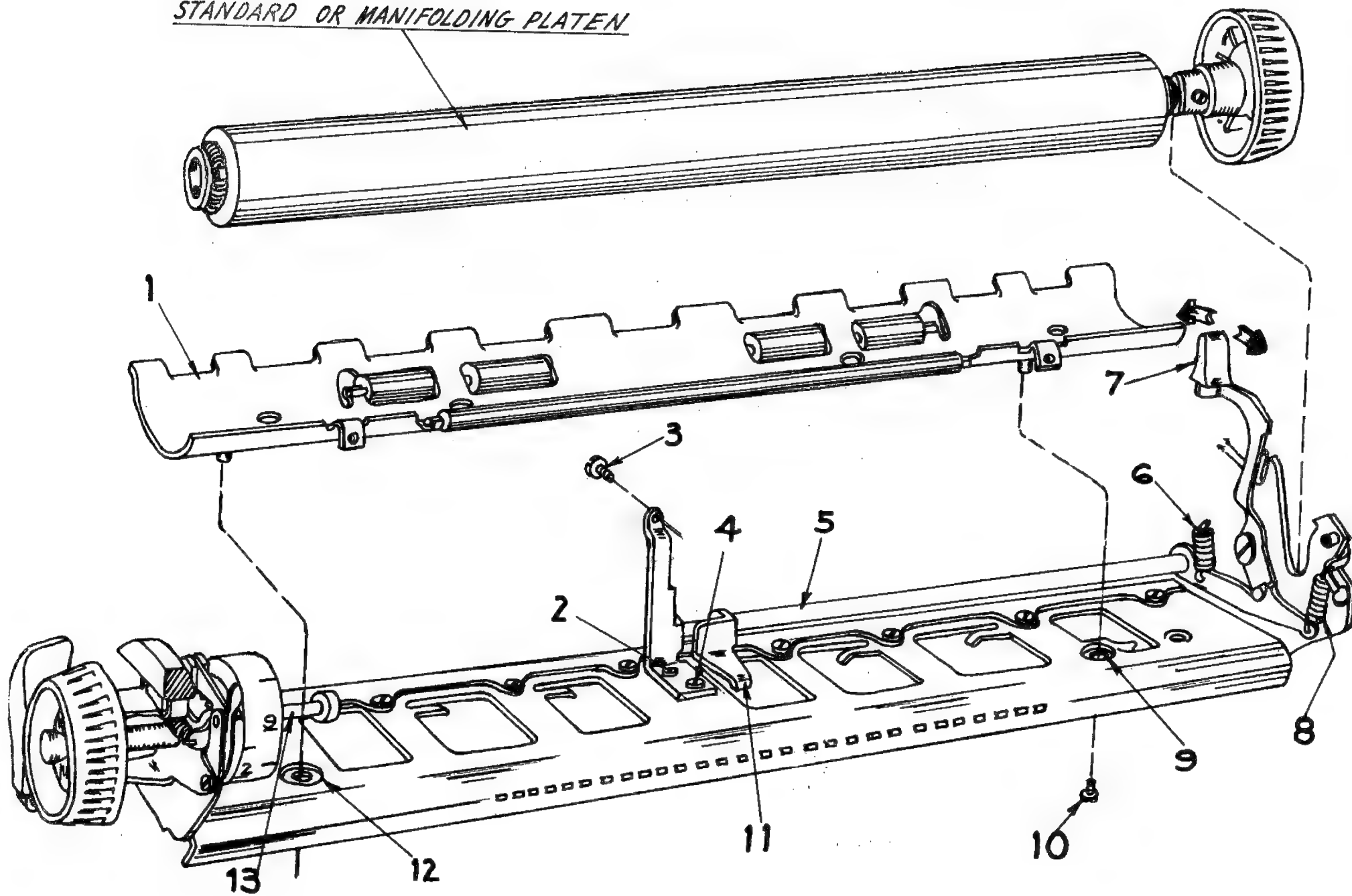
Fit carriage by loosening raceway SCREWS (3) and locating CARRIAGE PLATE RACEWAY (2) forward for tighter fit, to the rear to loosen. Retighten screws. Loosen about three RACEWAY SCREWS (3) for spot fitting. For a true fitting test, unhook spring drum cord and attach in slot (7) of CARRIAGE BED plate (8).

## CARRIAGE TRUCK REMOVAL AND REPLACEMENT

1. Move carriage to the extreme right, loosen 8 carriage RACEWAY SCREWS (3). A spring hook may be used to guide truck out.
2. Before replacing Truck Assembly, make certain they are straight in both positions as illustrated (11). They can be reformed with your fingers if necessary.
3. Insert truck assembly carefully. DO NOT FORCE IN POSITION. Make certain the TRUCK GEAR (10) enters the slots provided for them, in CARRIAGE PLATE (6) and BED Plate (8). When the carriage is at the extreme right TRUCK should be positioned as illustrated (9).



STANDARD OR MANIFOLDING PLATEN



## PAPER FEED MECHANISM

### REMOVAL

1. Remove Platen.
2. Remove Paper Table SCREW (10) and Paper Table ASSEMBLY (1).
3. Unhook SPRINGS (6) and (8).
4. Remove Center Upper Paper Table SCREW (3). Remove SCREW (2) and (4). Remove Paper Release Shaft ASSEMBLY (5) from Bracket and LIFT OUT.

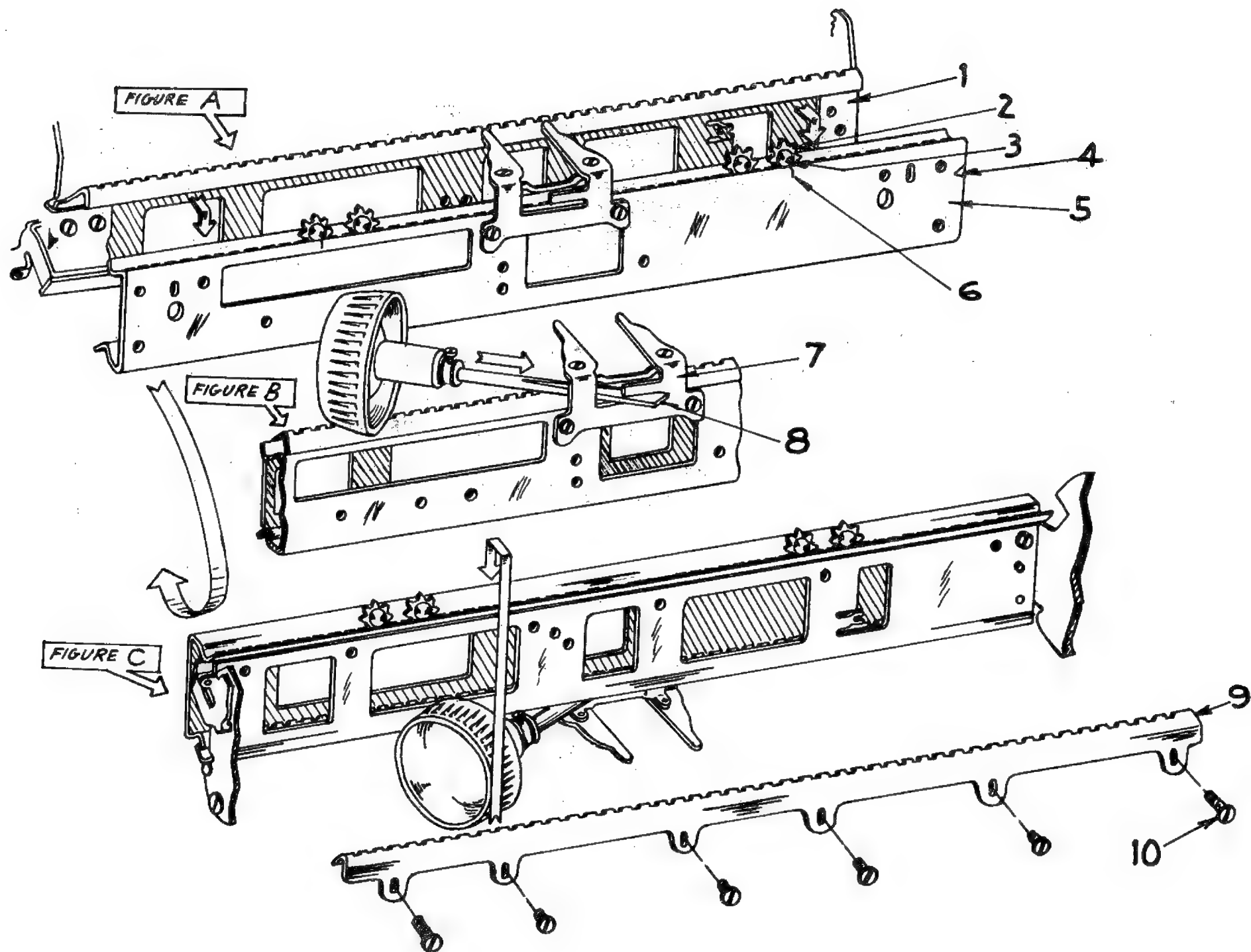
For machines not counter-bored that have to produce more than an original and seven copies, it will be necessary to drill or counter-bore a depression .020 deep or half the thickness of stock around Paper Table Guide Holes at (9) and (12) on the carriage top plate. Use a 5/16" or 1/4" drill. This can be done without removing from the machine. It will be necessary to remove the platen Variable SHAFT (13) for clearance on left side. USE CAUTION not to recess the hole over .020 for it could distort the Guide Hole.

### REPLACEMENT

1. Assemble front and rear feed rolls, Part #450130-01 and 450250-01 in Paper Table (1).
2. Assemble RELEASE ARM SPRING (8) Part #451361 and Erasure Shield Arm SPRING (6) to Shaft (5).
3. Position Paper Release Shaft Assembly in Bracket and assemble to Carriage Plate. Tighten Bracket Screws. Hook Springs (6) and (8).
4. Replace Paper Table (1) and Screw (10). If Paper catches under Rear Feed Rolls, replace Assembly.
5. Use Platen 445111-01 for up to 6 copies. Platen 445121-01 for over 6 copies.

### TEST

1. Insert a sheet of 8 1/2 by 5 1/2 paper past the Rear Feed Rolls. Pull out Paper from rear Feed Rolls -- the Platen must ratchet when the paper is pulled out.
2. Insert paper again and pull out through the front of the carriage. The paper should feel snug as it is pulled past the Front Feed Rolls.
3. The Paper Release Lever (7) must have a minimum of play after the above tests are made. To decrease play, form ARM at (11) down. To increase play, form ARM (11) up.
4. Make sure bail rolls are free and scale has proper clearance, about .038 from Platen. If several copies are used, see that the line indicator still clears the copy, if not, it could cause improper feeding.



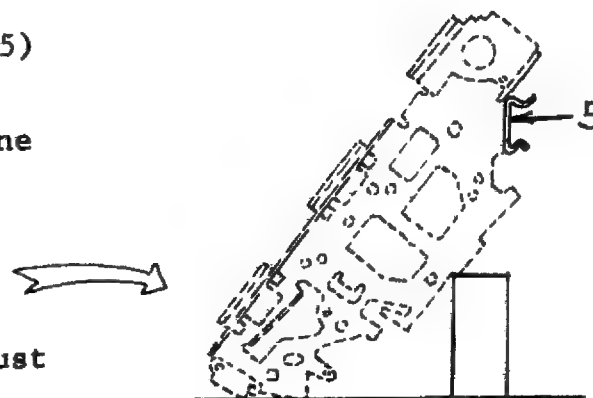
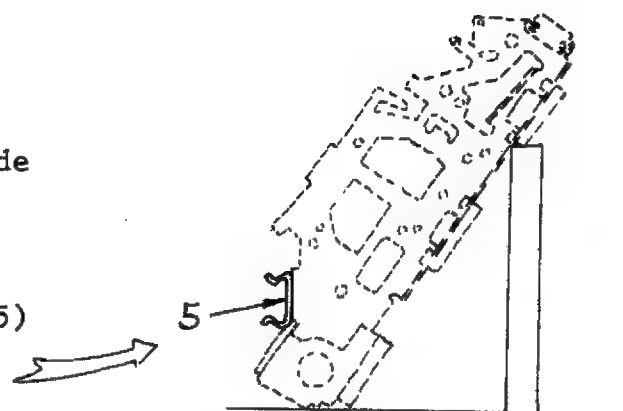
## 10" CARRIAGE TOP PLATE REMOVAL & REPLACEMENT

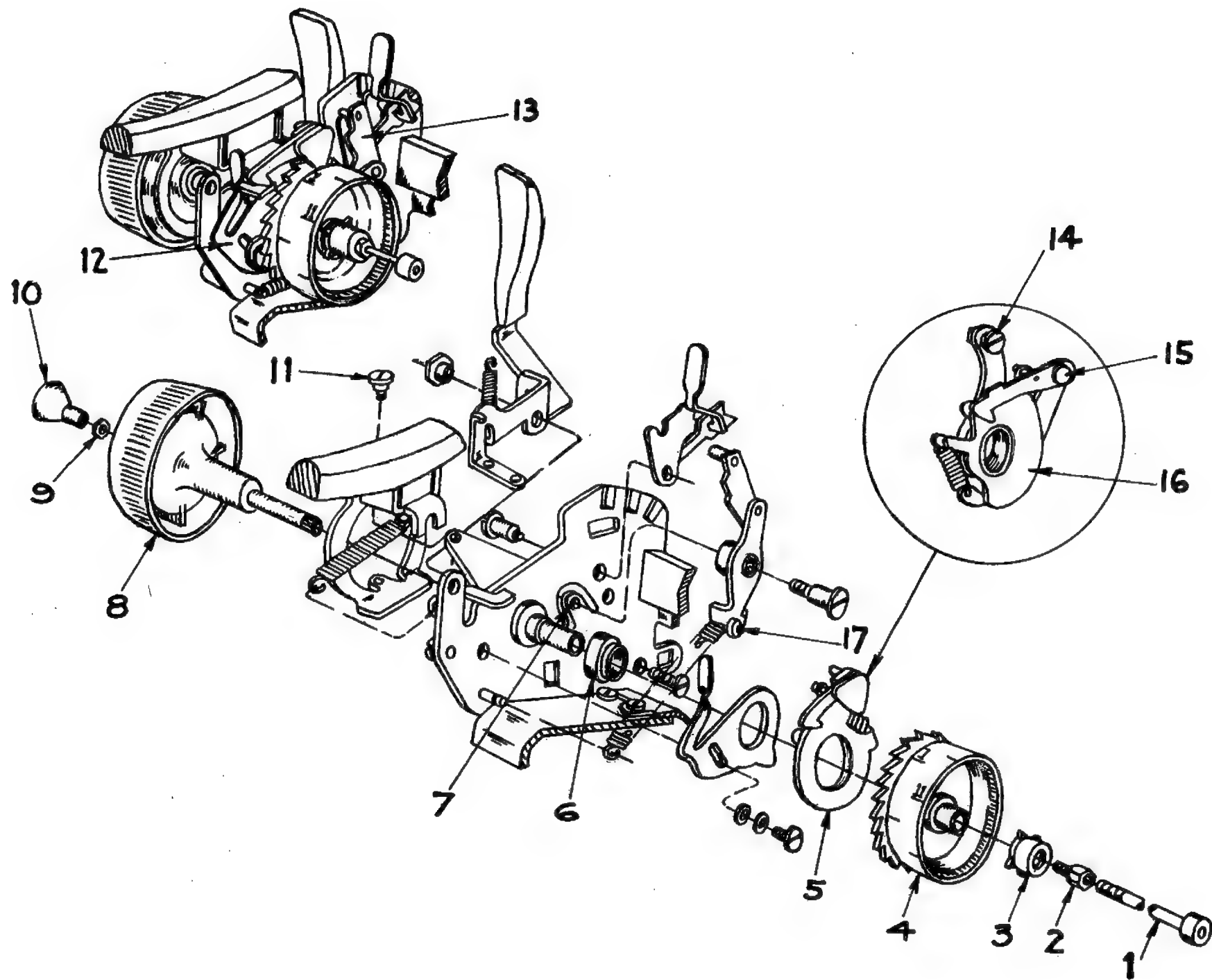
### REMOVAL

1. Remove Machine Casing Parts.
2. Remove Platen, Linespace Mechanism, Lower Paper Table, Paper Release Shaft Assembly.
3. Unhook Carriage Cord and attach it to the SLOT (4) of the CARRIAGE BEDPLATE (5).
4. Remove 6 Carriage Raceway SCREWS (10). Note the two End Screws are longer.
5. Lift off the CARRIAGE TOP PLATE (1) and carefully slide CARRIAGE RACEWAY (9) out.

### REPLACEMENT

1. Block up the machine front so the CARRIAGE BEDPLATE (5) assumes the position illustrated in FIGURE A.
2. Place 4 Front Ball Retainers so they lay flat on CARRIAGE BEDPLATE (5). Place BALLS (3) in RETAINERS (2) and raise RETAINERS to upright position. Outside Balls should be on DIE MARK (6). Leave two spaces between inside Balls.
3. Locate CARRIAGE TOP PLATE (1) on Carriage BEDPLATE (5) as illustrated in FIGURE B.
4. Wedge a SHORT TAPERED SCREW DRIVER (8) in slot of line INDICATOR BRACKET (7) to hold Carriage TOP PLATE (1) firmly in position.
5. Block up the rear of the machine as illustrated in FIGURE C. Position Balls and Retainers.
6. Replace CARRIAGE RACEWAY (9) and SCREWS (10) and adjust for proper carriage fit.



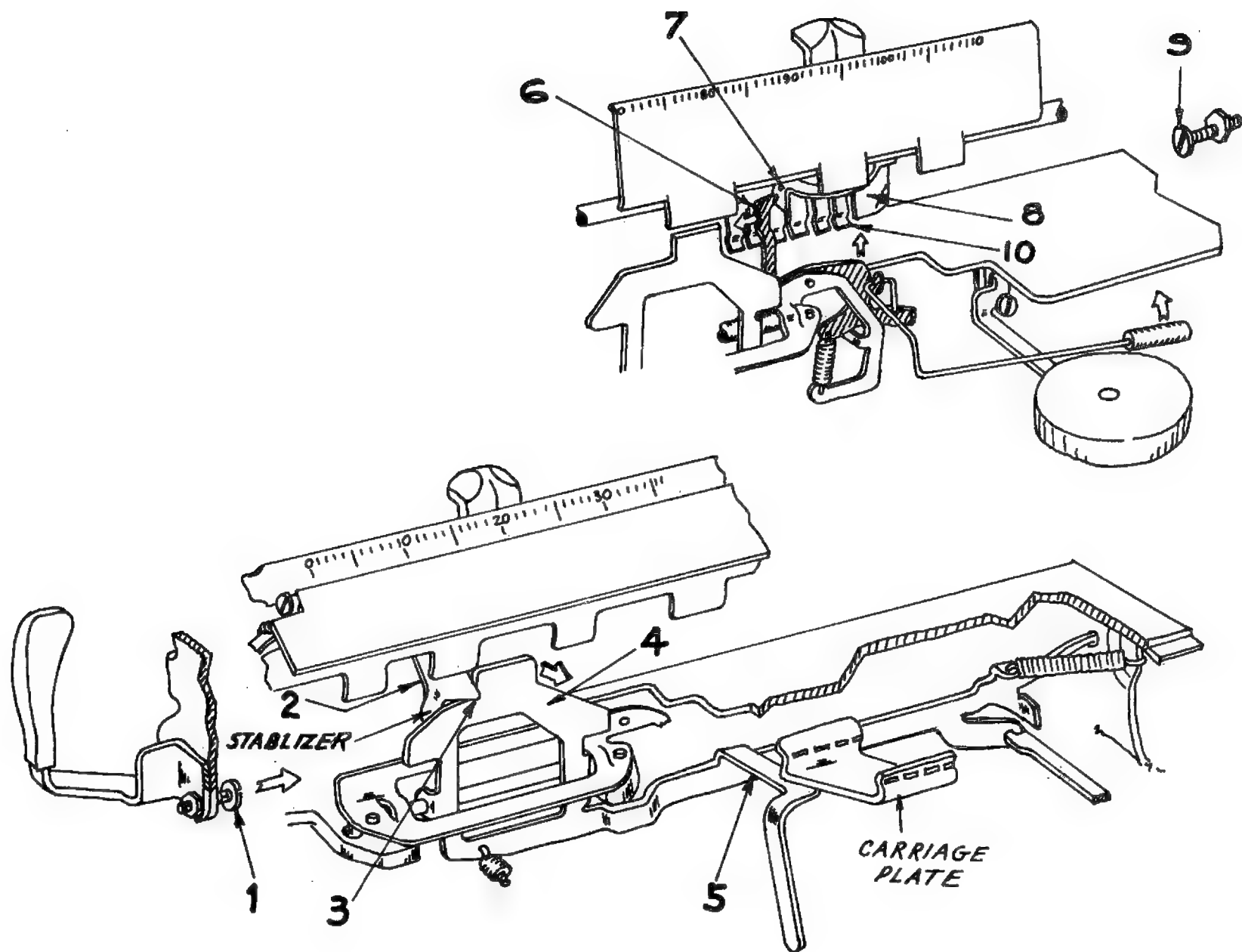


### LINESPACE ADJUSTMENTS

1. Linespace lever must have free movement on SCREW (11).
2. LINESPACE RETAINING PAWL ROLLER (17) should be seated between two teeth of the LINESPACE WHEEL (4) at the completion of each linespace stroke.
  - A. If the platen rolls backward, after stroke is completed, place screwdriver in the forward SLOT of the CUT-AWAY SECTION (7) of the Carriage End and bend to the rear.
  - B. If the platen moves forward, place screwdriver in rear SLOT (7). Bend forward.
3. On 42, 45 and 48 tooth LINESPACE WHEEL ASSEMBLIES (4) the LINESPACE DOG ASSEMBLY (16) replaces (5) and requires no LINESPACE DOG ARM BUSHING (6). For other linespace conversion parts, see linespace charts on parts list.
4. Adjust eccentric screw (14) for positive locking when LINESPACE DOG ARM (15) contacts platen RETAINING PAWL LOCK (13).

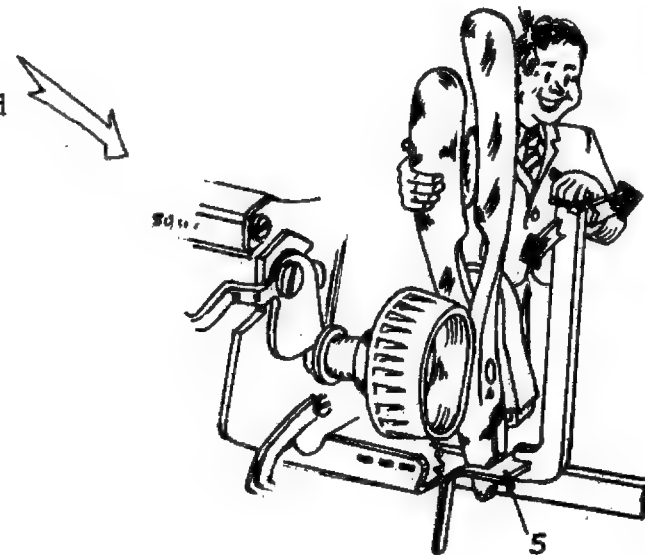
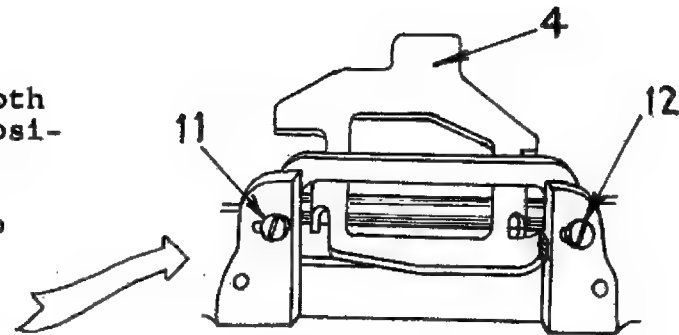
### REMOVAL

1. Variable Linespace KNOB (10) and NUT (9), PLATEN VARIABLE LINESPACE LEVER CAM SHAFT ASSEMBLY (1), PLATEN KNOB BUSHING RETAINER SCREW NUT (2), PLATEN KNOB BUSHING RETAINER (3), LEFT PLATEN KNOB (8).
  - A. If PLATEN KNOB BUSHING (3) should freeze on KNOB (8) shaft, insert SCREW NUT (2) into KNOB (8) one turn and drive screw NUT through. The KNOB SHAFT BUSHING (3) will then drop free.
2. Depress PLATEN RETAINING PAWL RELEASE LEVER (12), lift out LINESPACE WHEEL (4), LINESPACE DOG ASSEMBLY (5) and LINESPACE DOG ARM BUSHING (6).
3. Reverse removal procedure for replacement. PLATEN KNOB RETAINER SCREW (2) must be very tight. Hold left KNOB (8) firmly and tighten PLATEN KNOB BUSHING RETAINER SCREW (2) very tight. Leave a slight amount of play on PLATEN KNOB (8) to assure freeness.
4. Adjust VARIABLE KNOB (10) and NUT (9) on SHAFT (1) so approximately three threads show on SHAFT. If VARIABLE is not properly detented, back KNOB and NUT out one or two threads.

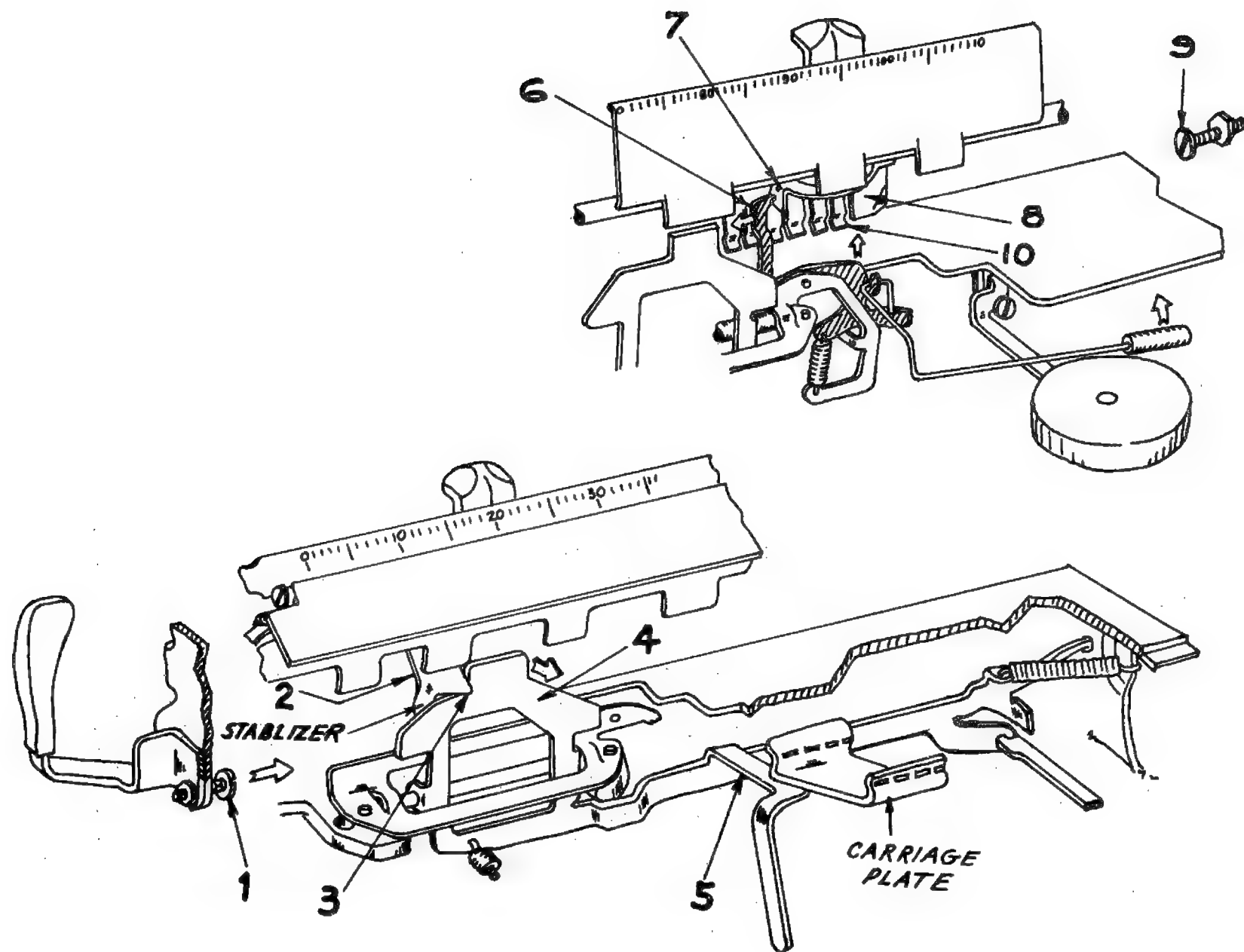


## LEFT MARGIN

1. The CARRIAGE STOP (4) must be free on its pivots both sideways and forward. It should restore to rest position with no collision with BELL HAMMER ARM (6).
2. To relocate CARRIAGE STOP (4), set left margin stop at 20. Loosen SCREWS (11) and (12) and adjust Carriage Stop horizontally to left MARGIN STOP (2) so Carriage will return at 20 with either a light or heavy linespace stroke. See that SCREWS (11) and (12) are tight.
3. Adjust CARRIAGE STOP (4) so it has safe contact at (3) with MARGIN STOP, as illustrated. Form ARM (5) of CARRIAGE STOP toward or away from Carriage Plate to locate. Use pointed pliers and wrench and adjust as illustrated.
4. The right edge of the left MARGIN STOP is cut on an angle to force the CARRIAGE STOP (4) backward to prevent the Margin Stop by-passing the front of the carriage STOP. The left margin stop cannot by-pass the carriage stop in front if the MARGIN STOP Stabilizer is tipped as close to the CARRIAGE STOP (4) as possible without rubbing it.
5. After locating CARRIAGE STOP (4) for proper left margin, depress Margin Release Key and return carriage to the extreme right to "0" with a light stroke. If the carriage fails to stop on "0", loosen CARRIAGE STOP SCREW NUT, turn in or out the left hand CARRIAGE STOP SCREW (1). Retighten NUT.

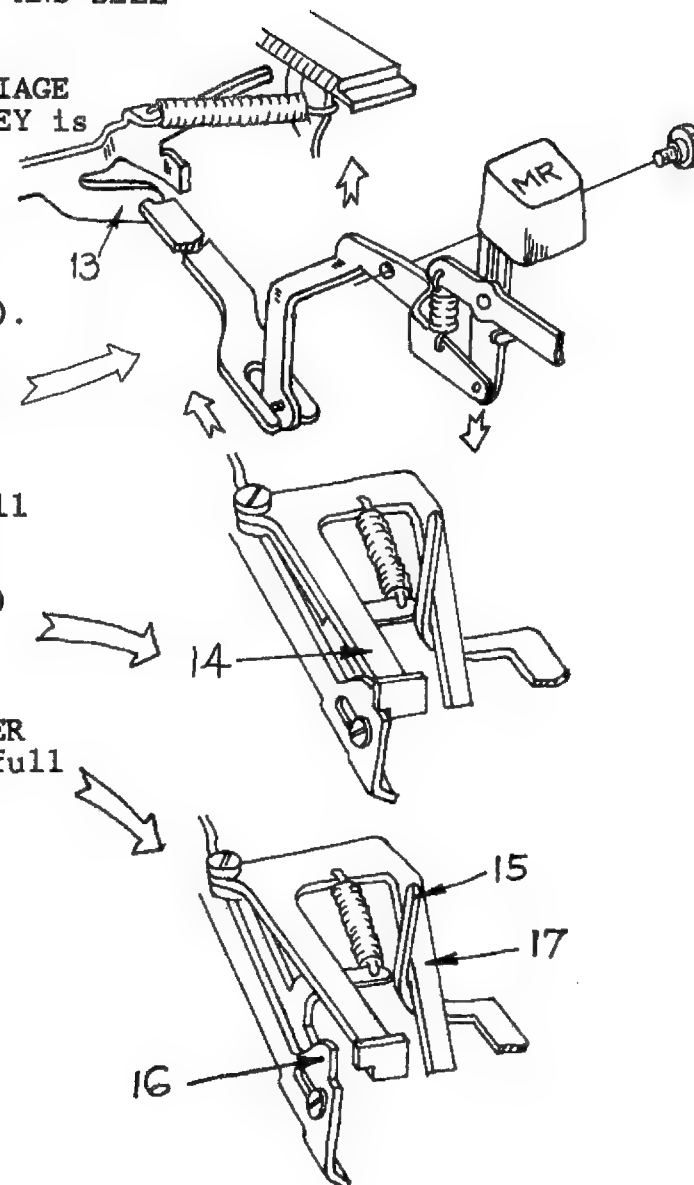






## RIGHT MARGIN, MARGIN RELEASE, LINELOCK AND BELL

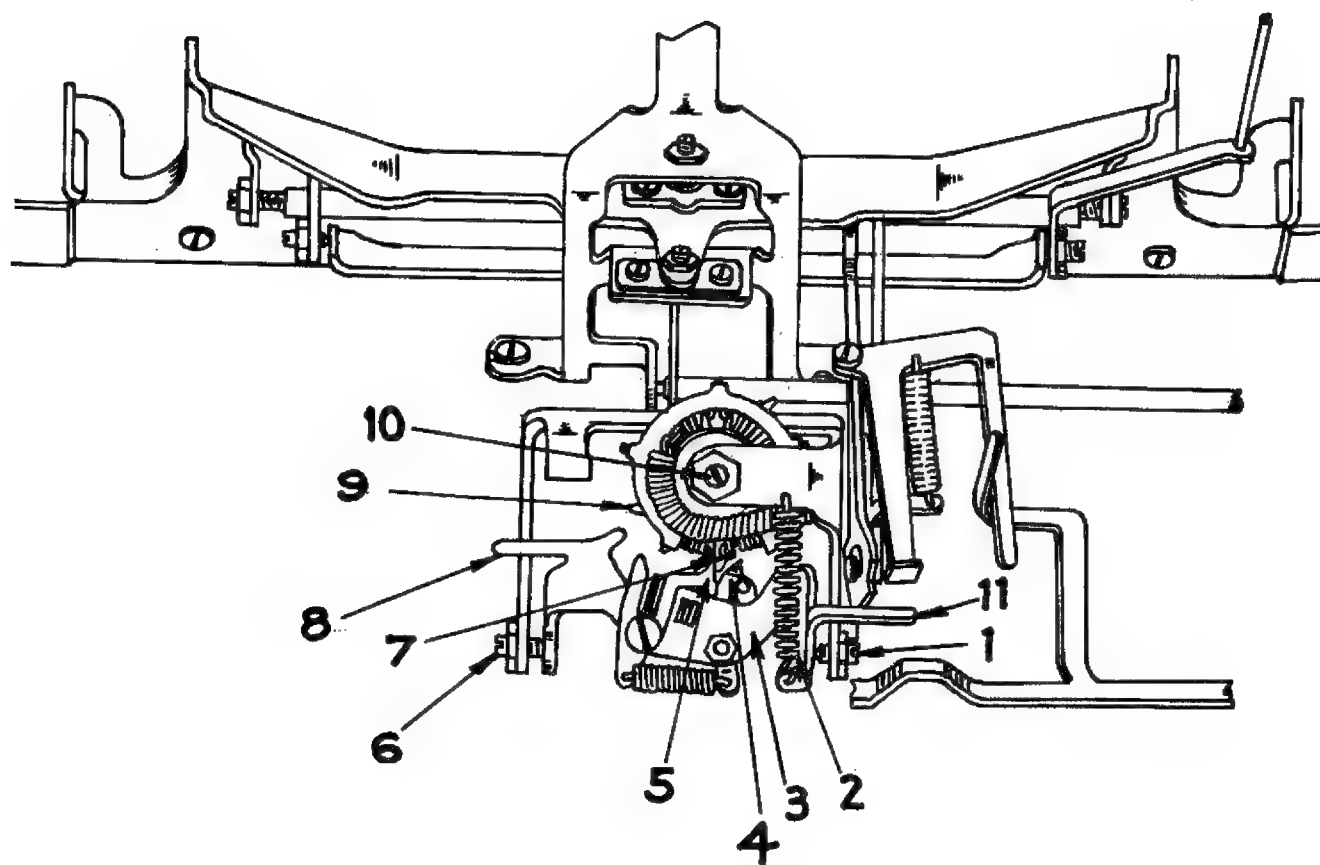
1. The RIGHT MARGIN STOP (8) should have safe contact on CARRIAGE STOP (4) and clear CARRIAGE STOP (4) when MARGIN RELEASE KEY is depressed.
2. Adjust BELL HAMMER ARM (6) to clear tabulator SPRING (10).
3. The BELL HAMMER (6) must clear the overthrow stop on the LEFT MARGIN STOP (3). ARM (6) should contact center of (7).
4. Adjust MARGIN RELEASE LINKAGE AT (13) so when the MARGIN RELEASE KEY is depressed, both margin stops clear CARRIAGE STOP (4).
5. Adjust right CARRIAGE END STOP SCREW (9) so the machine will print on the last line of the scale.
6. When RIGHT MARGIN STOP (8) or RIGHT CARRIAGE STOP SCREW (9) contacts the CARRIAGE STOP (4), the LINELOCK (14) should assume the position illustrated.
7. The LINELOCK (14) should have equal throw in UPPER and LOWER CASE. Adjust FINGER (15). The LINELOCK should lock with full contact on TRIP ARM (16). Adjust FINGER (17) sideways.



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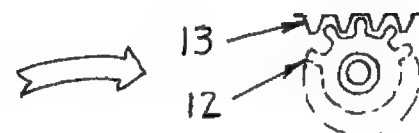
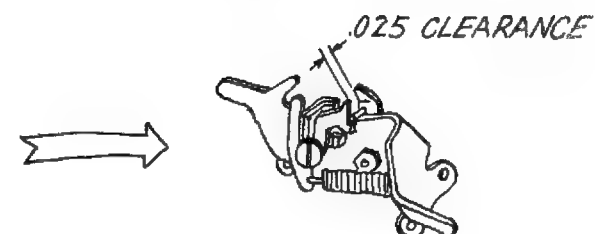
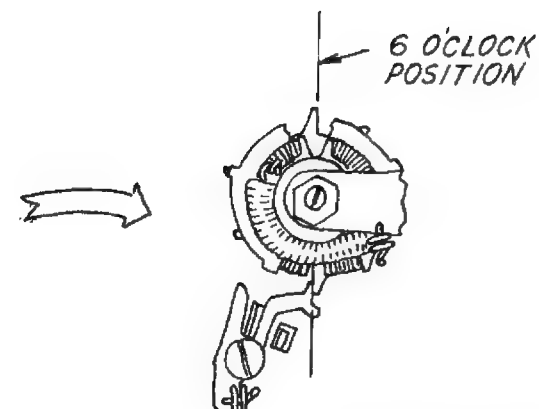
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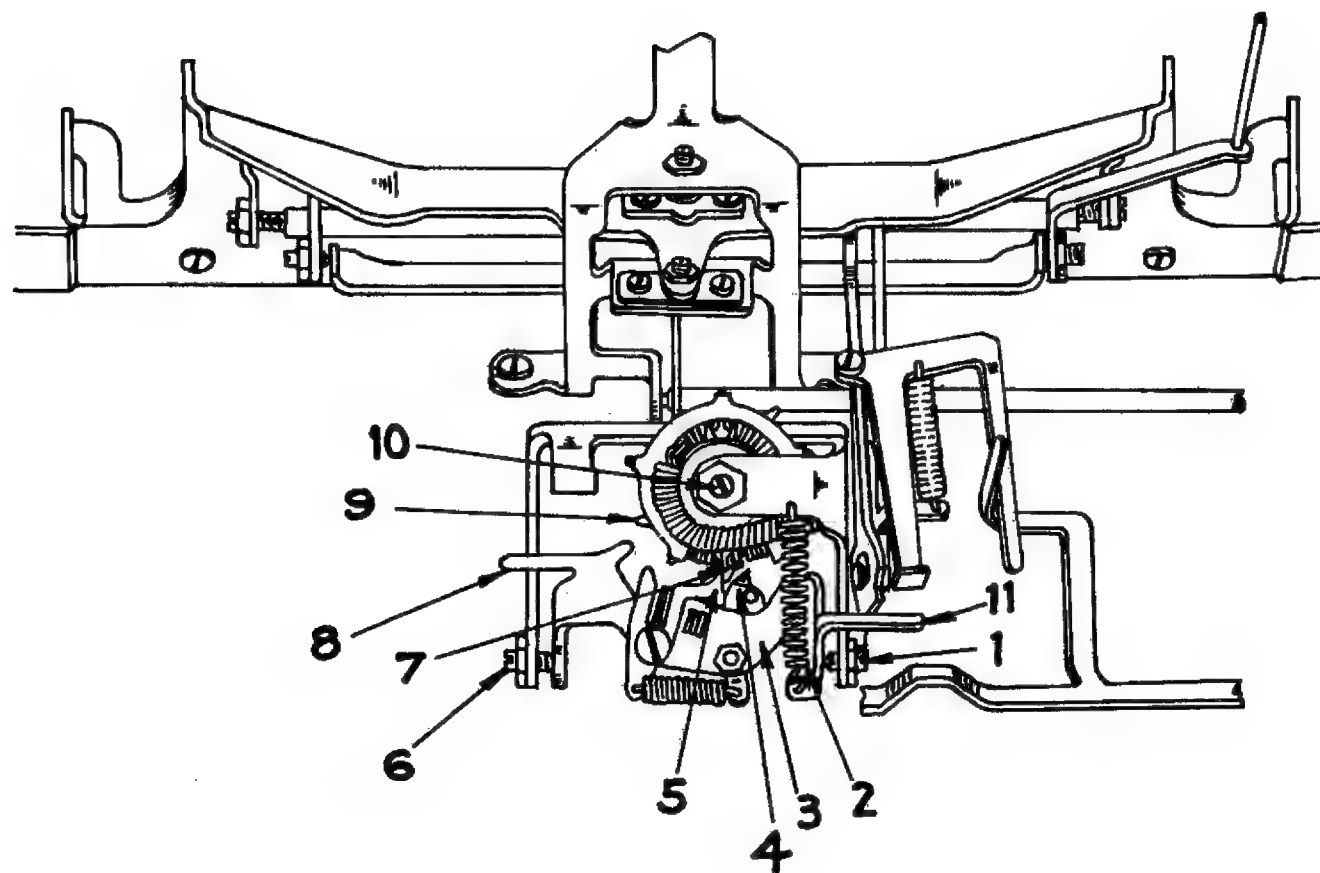
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## ESCAPEMENT

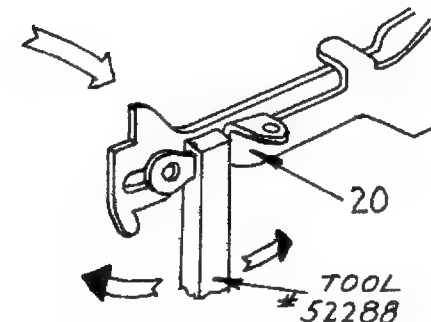
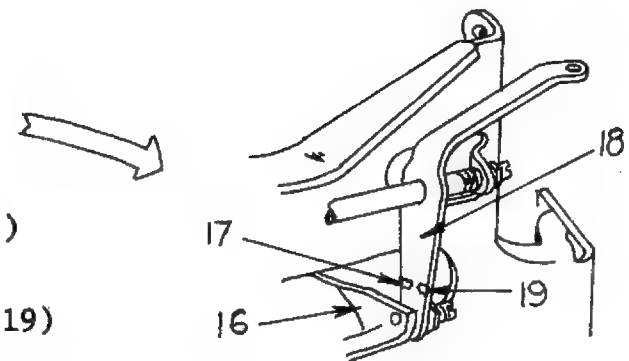
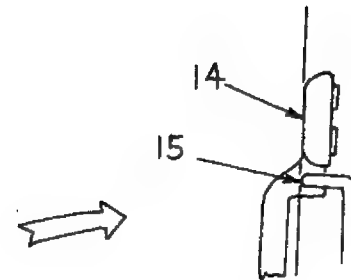
1. Adjust ESCAPEMENT ROCKER SCREWS (1) and (6) so SPACE WHEEL (9) will assume 6 o'clock position.
2. Adjust ARM (8) so ESCAPEMENT RATCHET DOG (5) is flush with STAR WHEEL TOOTH (7).
3. ESCAPEMENT ROCKER should be adjusted with a minimum end play. Test for freeness -- Unhook ESCAPEMENT ROCKER DRAW SPRING (2), tip machine back, move ESCAPEMENT ROCKER (3) forward. The ESCAPEMENT ROCKER (3) should drop freely to rest position.
4. The space between the RATCHET DOG (5) and STEPPING DOG (4) should be .025.
5. The SPACE WHEEL (9) should be adjusted with adjusting SCREW (10) for just enough end play to permit free movement.
6. The ESCAPEMENT PINION (12) should mesh with RACK (13) as deep as possible and still permit free movement.





## ESCAPEMENT (Con't)

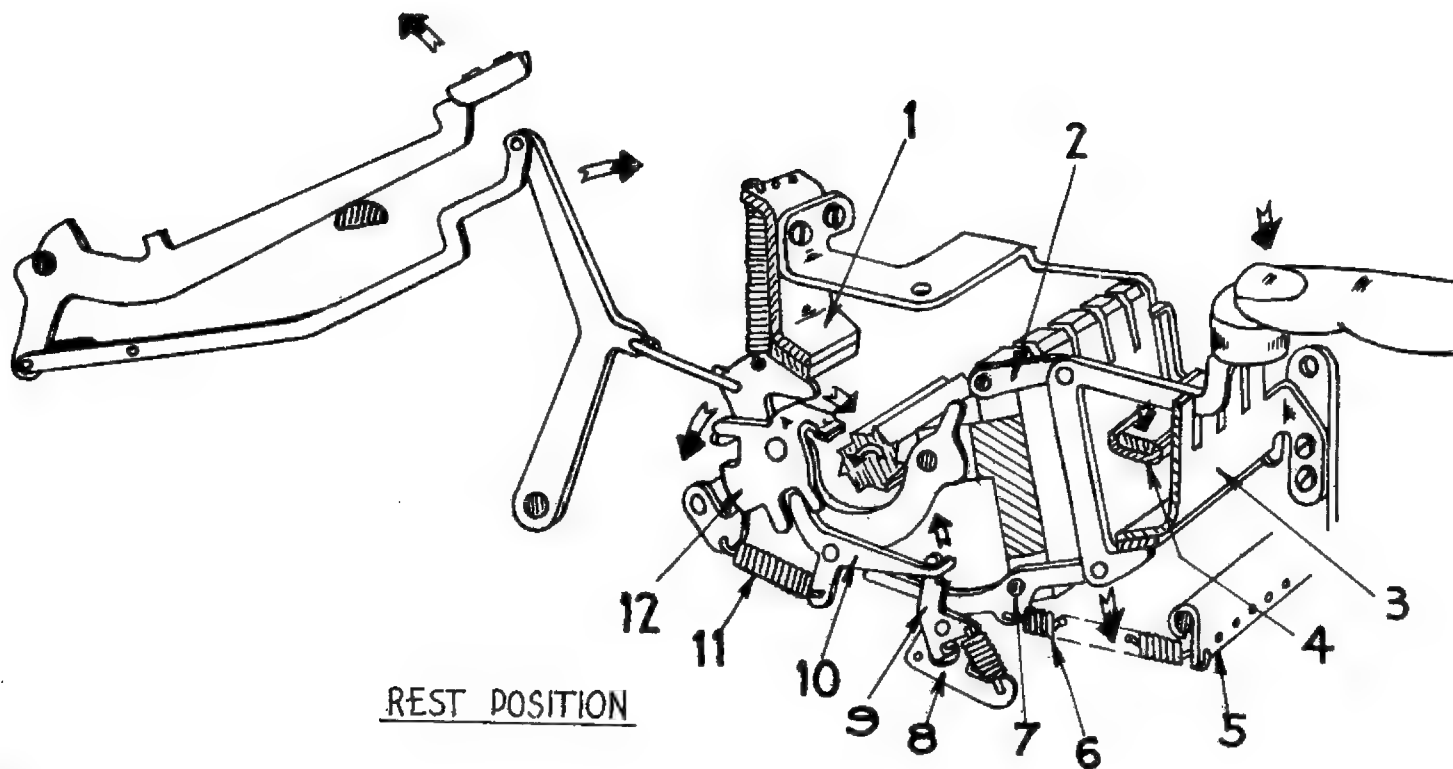
1. The ESCAPEMENT should TRIP when the BACK of the TYPE (14) reaches the face of the GUIDE (15) as illustrated.
2. For earlier TRIP, bend ESCAPEMENT TRIP ARM (11) UP; for later TRIP bend ESCAPEMENT TRIP ARM (11) DOWN.
3. The TRIP should be the same on the extreme left, the center, and the extreme right. Trip may be corrected by relocating the TYPE BAR UNIVERSAL (16). Test H Q " type bars.
  - A. If the TRIP is OUT on the RIGHT, maul FRONT EDGE (17) of the right UNIVERSAL SHAFT ROCKER ARM (18).
  - B. If the TRIP is IN on the RIGHT, maul the REAR EDGE (19) of the RIGHT HAND UNIVERSAL ARM (18). Use maulers #51379 for this adjustment.
  - C. If the TRIP is IN, in the Center and out on each END, place wrench #52288 on the ESCAPEMENT GANG TRIP ARM BRACKET (20) as illustrated. Bend UP slightly. Reverse this procedure if the TRIP is OUT in the Center.



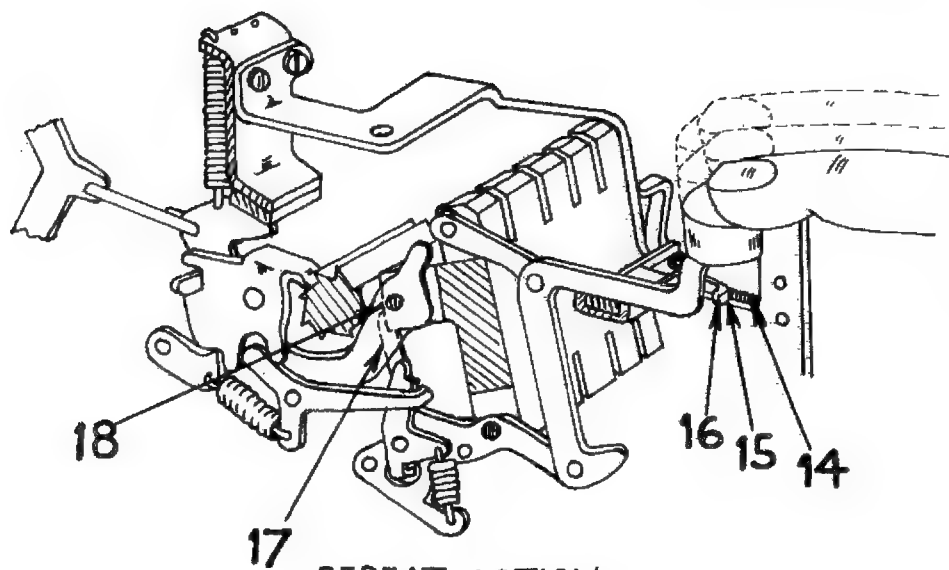


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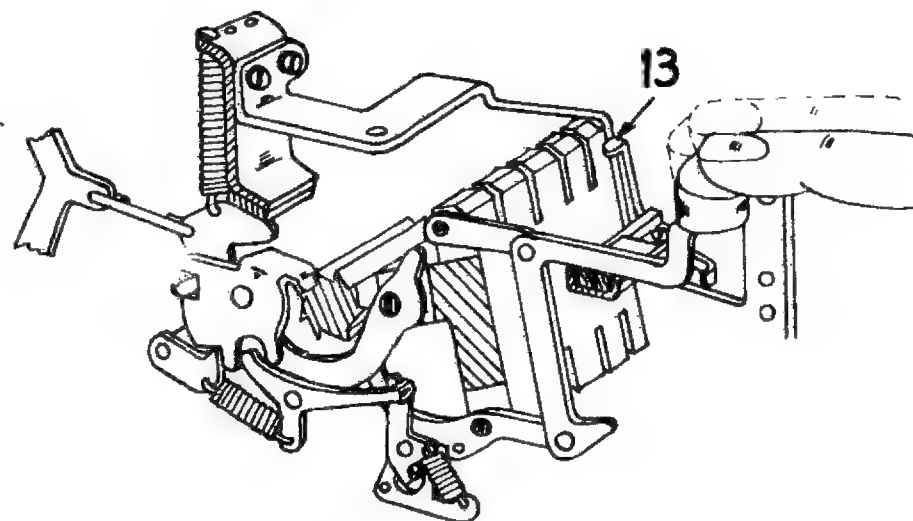
NOTES:



REST POSITION



REPEAT ACTION



SINGLE STROKE

## KEYLEVER ACTION

The keylevers are supported and guided by the UPPER (2) and LOWER KEY LINKS (8) and the KEYLEVER GUIDE COMB (3). A cork pad across the bottom of the KEYLEVER GUIDE COMB (3) establishes rest position for the KEYLEVERS, and the keylevers are held upward by KEYLEVER SPRING (6). The forward end of the KEYLEVER SPRING (6) is attached to the KEYLEVER SPRING BAR (5) which can be moved by the TOUCH CONTROL DIAL to the desired KEYLEVER or TOUCH tension.

The lower limit of key depression for single printing cycle is established when the KEYLEVER strikes the REPEAT BAIL (4).

When a KEYLEVER is depressed, the LOWER KEY LINK (8) rotates around its FULCRUM ROD (7), moving the rear assembly up. An ACTUATOR DOG TRIP (9) is pivotally attached to the LOWER KEY LINK (8) and can rotate to limits established by a bent over ear at the DOG TRIPS (9) lower end which extends through a large hole in the bottom of the LOWER KEY LINK (8).

The upward movement of the LOWER KEY LINK (8) brings the upper end of the DOG TRIP (9) into contact with the ACTUATOR DOG BELLCRANK (10) which is pivotally attached to the lower curve of the POWER ACTUATOR (12) and is held down by ACTUATOR SNAP SPRING (11). The cushion on the POWER ACTUATOR SPRING BAR (1) establishes rest position for the POWER ACTUATOR (12). SPRING BAR (1) is set to gauge at the factory, do not adjust unless absolutely necessary.

## REPEAT KEY ACTION

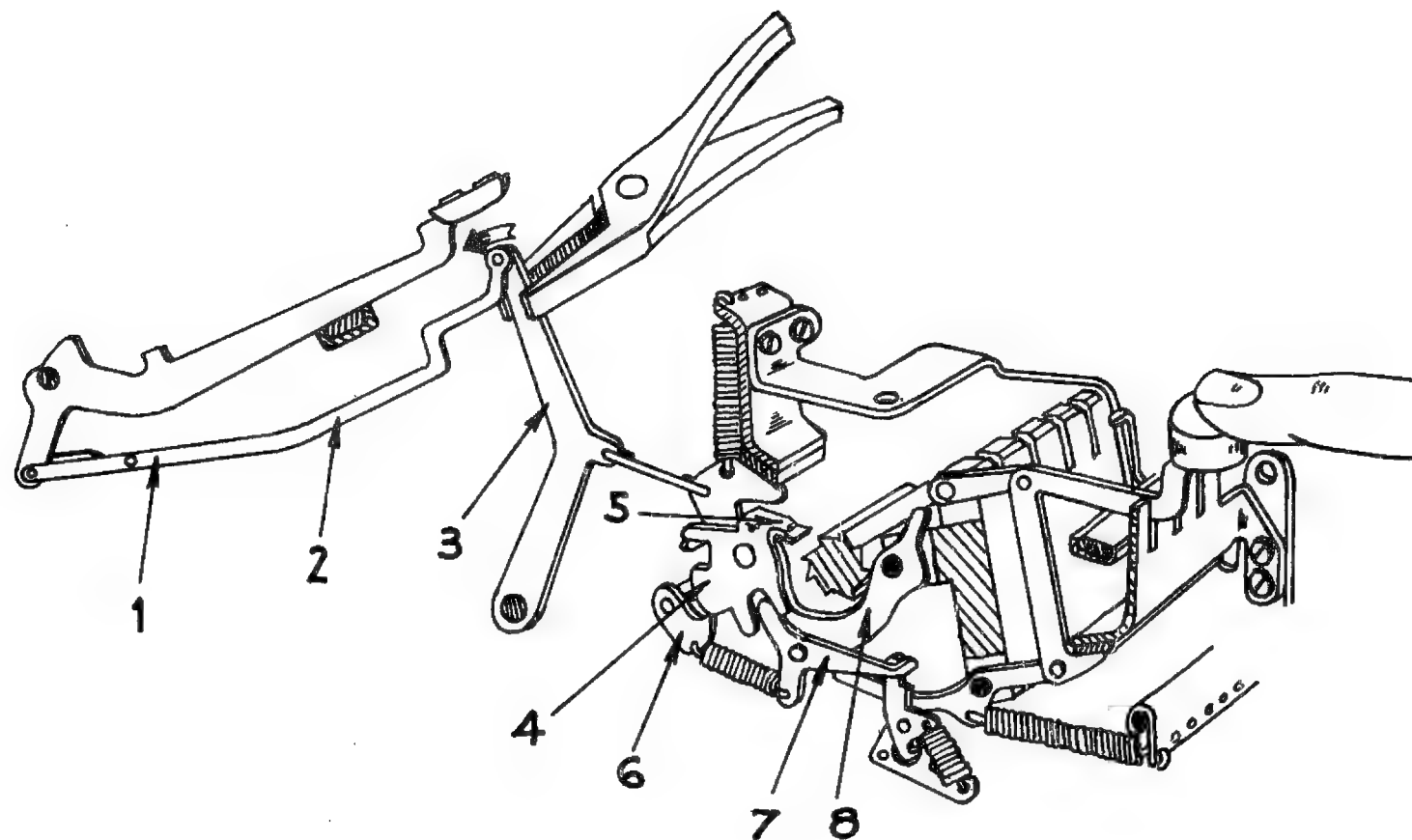
The difference between key links repeat and regular links is tongue (17) which extends to the rear and upward. Increased pressure on repeat key will rotate the repeat bail around its fulcrum, extending the repeat bail springs (14) until the lower repeat bail stop (16) strikes the fulcrum plate (15). The repeat action will continue as long as the keylever is held down.

## ADJUSTMENTS

Adjust the height of the KEYLEVER GUIDE COMB (3) so there is .030 clearance between the ACTUATOR DOG TRIP (9) and ACTUATOR DOG BELLCRANK (10).

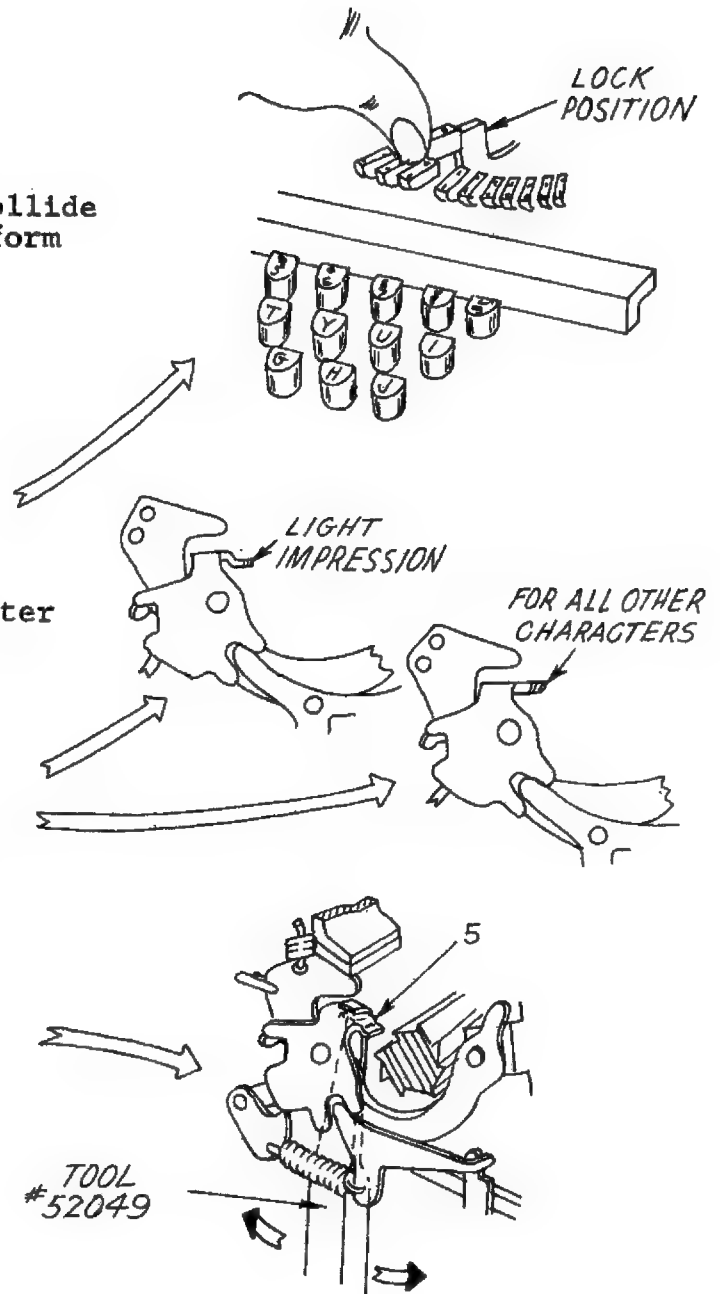
If .030 adjustment above is accurate, the KEY BUTTON should travel .125 to TRIP, .175 to contact REPEAT BAIL (4). Adjust STOP (13) on REPEAT BAIL (14) for this travel.

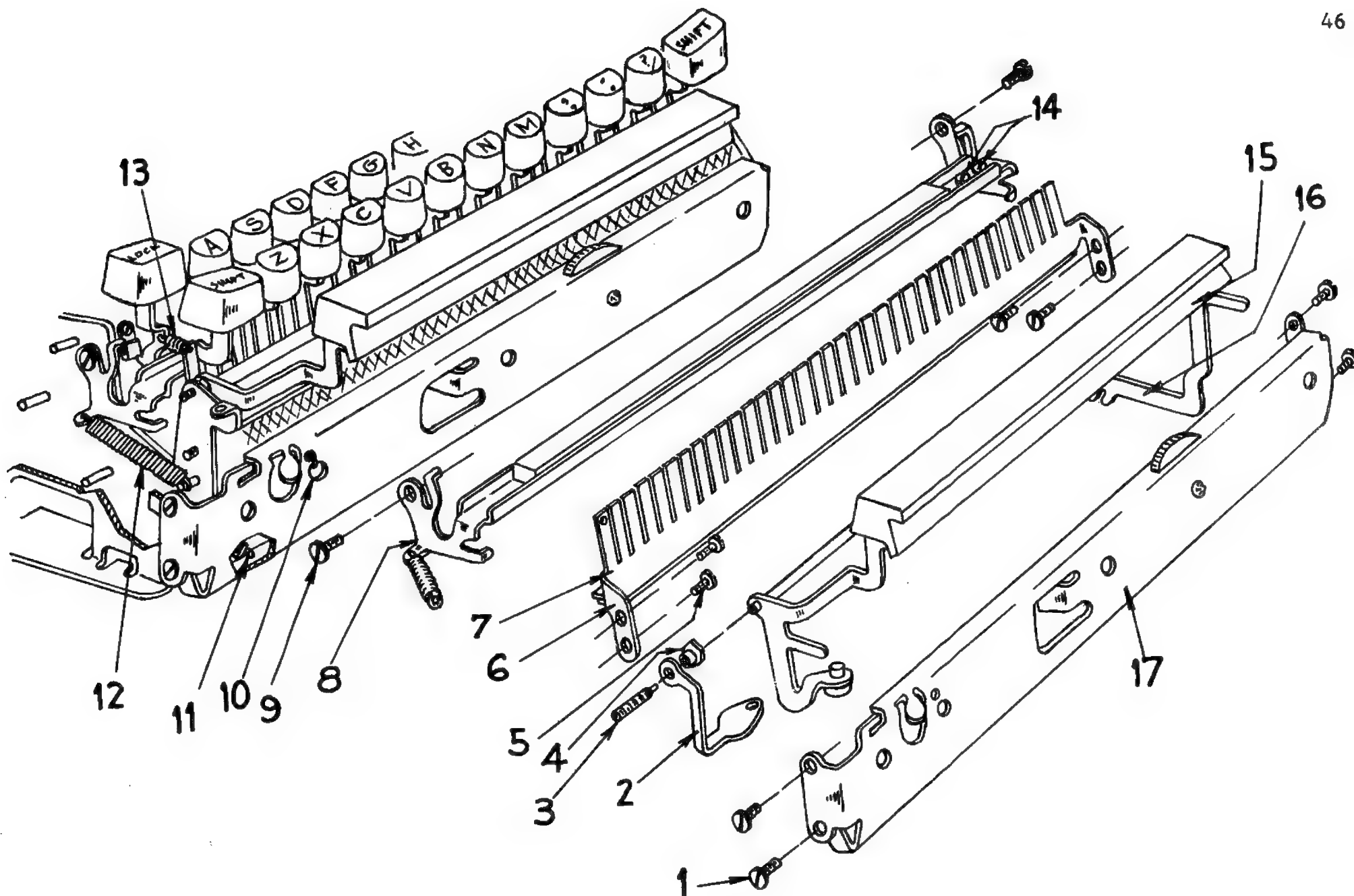
The KEY BUTTON should then travel .235 to repeat, .270 to contact STOP (15). Adjust TONGUE (17) to contact FULCRUM COMB (18) for earlier or later repeat trip.



### KEY ACTION (Con't.)

1. TYPE BAR LINKS (2) must be adjusted so they do not collide in upper or lower case. If adjustment is necessary form links at (1) near rivet.
2. END TYPE BAR LINKS must clear RIBBON SPOOLS, E and L sublevers must clear KEYLEVER MASK in capital case.
3. R X # C K ( . ) Sublevers must not collide with tabulator levers.
4. To decrease excessive travel before locking, JACK sublevers to the rear. This will increase type impression. JACKING sublevers forward will decrease type impression. Always check POWER ACTUATORS (8) after this adjustment to see if they restore properly.
5. There are two types of POWER ACTUATORS used:
  - A. Light impression characters such as : 1 , . ; -
  - B. For all other characters
6. ACTUATOR DOG (4), DOG SNAP (6), DOG BELLCRANK (7) must be free on their rivets. The ACTUATOR DOG (4) SHOULD have slight chuck on rivet.
7. Type impression may be increased by adjusting DOG SHELF (5) up slightly as illustrated. After this adjustment see that the DOG SHELF snaps into contact position with the POWER ROLL.



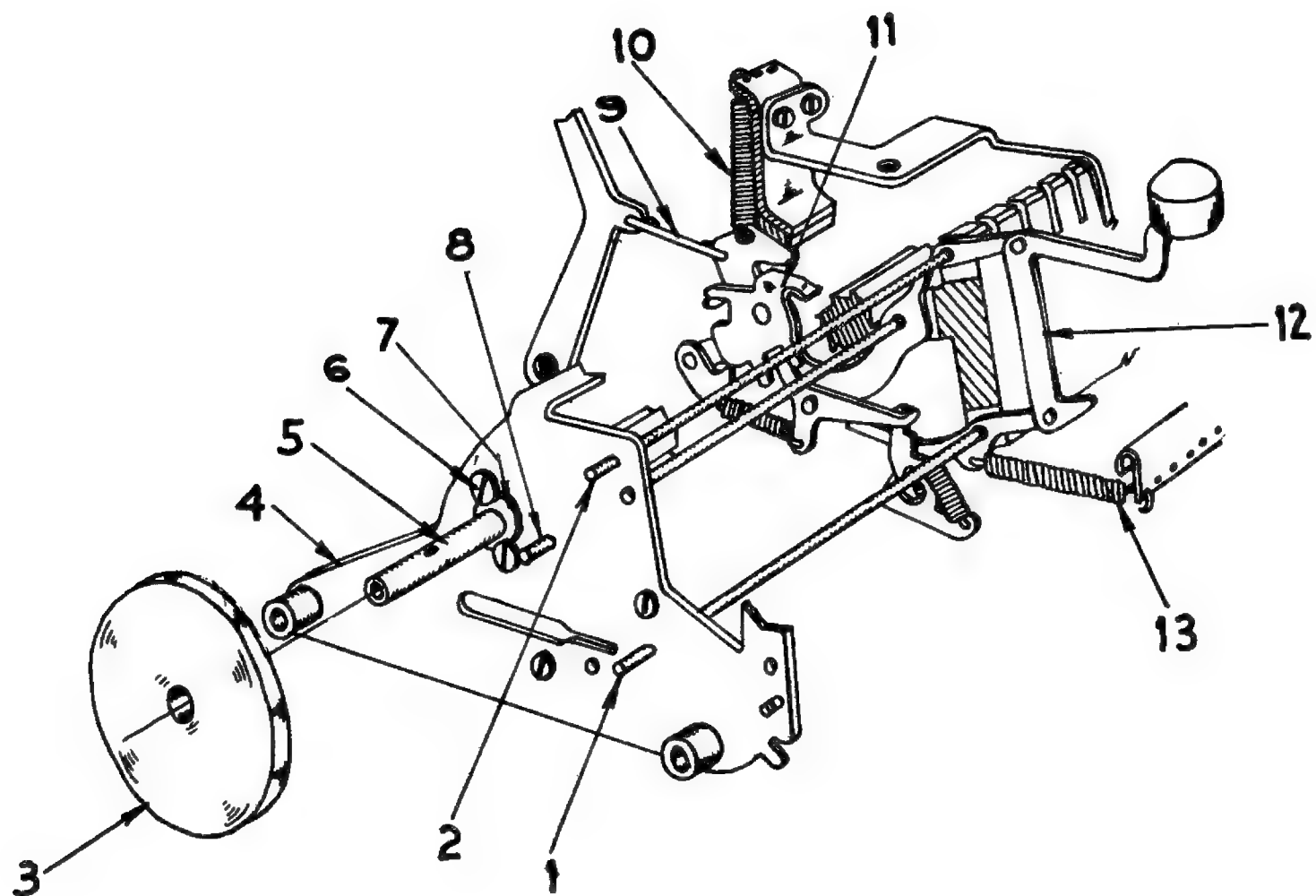


### FRONT UNIT REMOVAL AND REPLACEMENT

1. Unhook SHIFT SPRING (11) and SPACE BAR STOP SPRING (10). Set the Touch Control Dial in Position 1. Remove four FRAME FRONT SCREWS (1). Lift off FRONT FRAME (17).
2. Loosen NUT (4), turn out SCREW (3). Lift out NUT (4) and SPACEBAR STOP (2). Lift out SPACEBAR ASSEMBLY (15). Note ARM (16) is positioned on SPACEBAR ACTUATOR STUD.
3. Scribe a line on both sides of KEYLEVER GUIDE COMB (7) at (6) to insure accurate replacement height. Unhook SHIFT LOCK SPRING (13). Remove four KEYLEVER GUIDE SCREWS (5). Lift out. Note that REPEAT BAIL SPRING (12) is attached to lower screw.
4. Turn out REPEAT BAIL SCREW (9). Remove SCREWS (14). Lift out REPEAT BAIL (8).

REVERSE PROCEDURE FOR REPLACEMENT.





### POWER ROLL REMOVAL

1. Remove power roll PULLEY (3). Two power roll bearing SCREWS (6). Remove POWER ROLL (5) out left side of FULCRUM COMB PLATE (4). The metal washers on each end should be located next to the power roll teeth. Felt washer should be located next to the power roll BEARINGS (7).

### POWER ACTUATOR REMOVAL

1. Unhook SPRING (10).
2. Drive fulcrum Wire (8) flush with FULCRUM COMB PLATE (4) to break the initial staking.
3. Use follow up ROD tool #51919 and drive ROD (8) keeping both rods together, when rods are in line with ACTUATOR (11) to be replaced, separate them enough for the ACTUATOR to drop free.
4. Unhook ACTUATOR from link (9). Replace original FULCRUM ROD.

### KEY LEVER REMOVAL

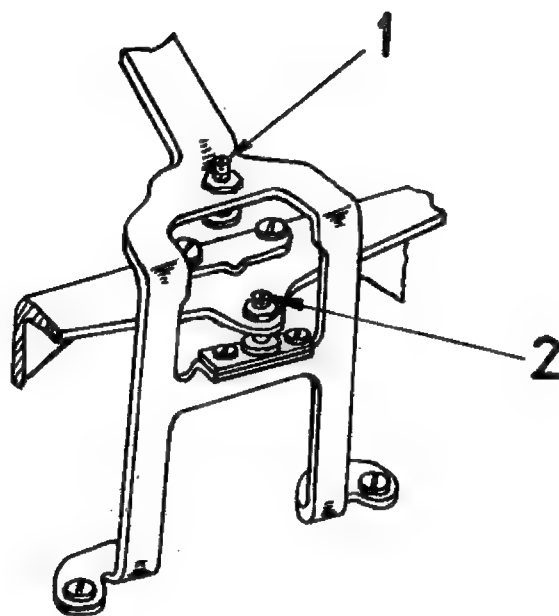
1. Remove front unit. Refer to preceding page.
2. Remove switch.
3. Unhook spring (13).
4. Use 2 follow up RODS tool #51919, as explained above, on FULCRUM RODS (1) and (2). Separate RODS and remove KEYLEVER (12).

Reverse procedure for replacement.

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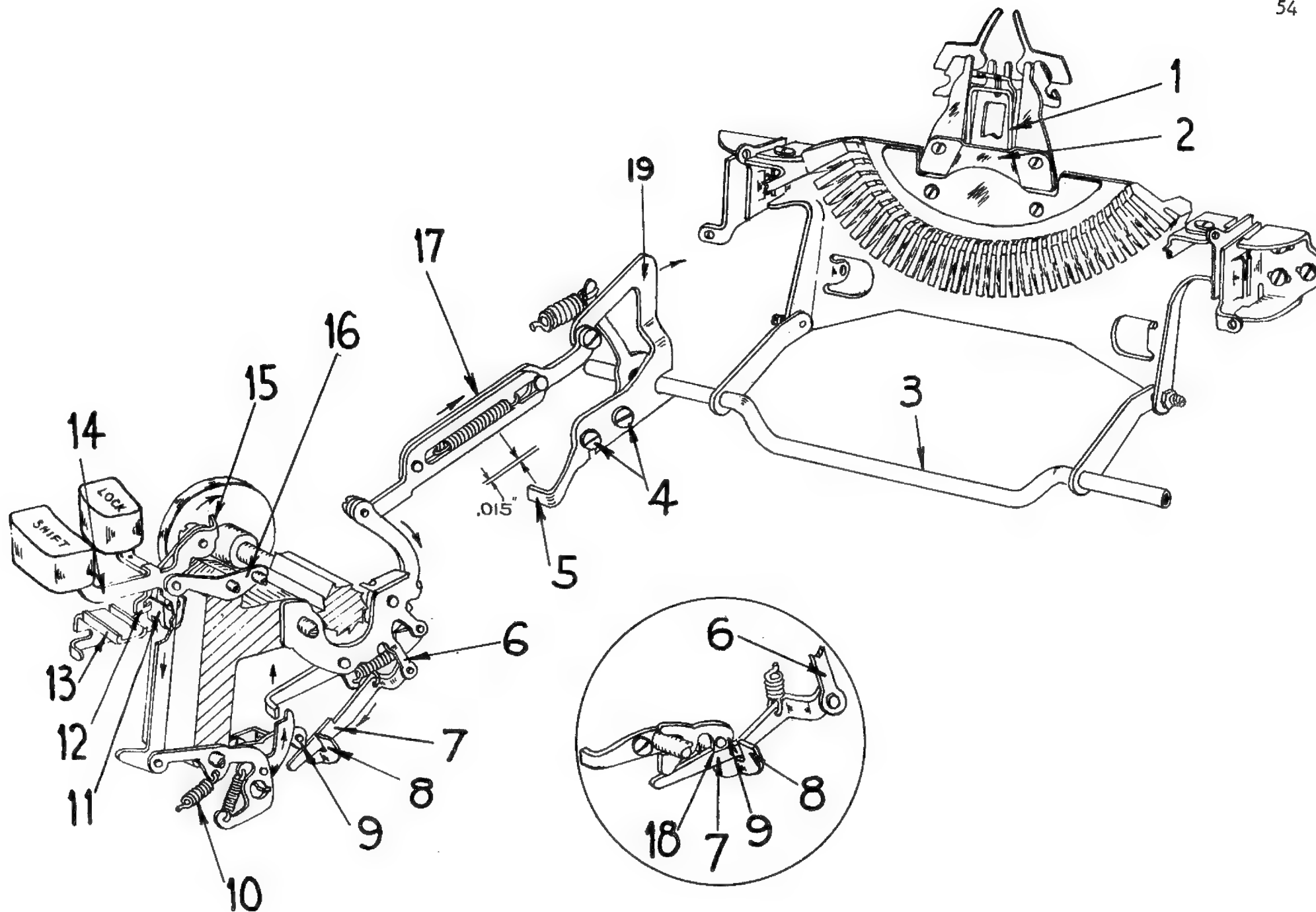


## MOTION

In referring to motion, we mean that as a result of proper adjustment, the bottoms of the capital letters are in alignment with the bottoms of the small letters. (If the correction is not too great this adjustment will not effect STEP 5 of the Power Shift Adjustments). Strike motion like this: NnNnNnNnNnNnNnNnNnNn

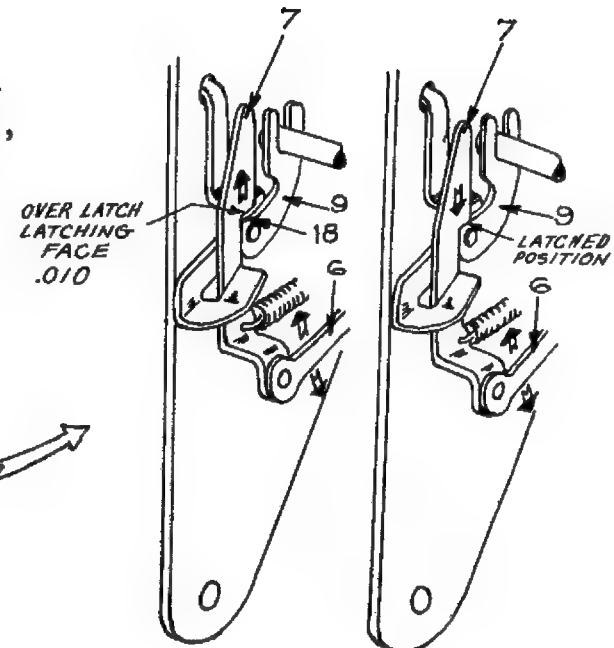
Rest machine on the back frame. The UPPER SHIFT STOP ADJUSTING SCREW (1) controls capital position on segment. This is sometimes referred to as putting capitals on feet. The lower shift stop ADJUSTING SCREW (2) controls the small letter position of the segment. Lock the shift in capital position and strike off all letters, (with copy set dial in low range), using space bar between each impression. If capital letters are light on top, turn out the UPPER SHIFT STOP ADJUSTING SCREW (1). If capital letters are light on the bottom, loosen screw nut, turn in SHIFT STOP ADJUSTING SCREW (1).

If the lower case letter is lower than the capital case letter NnNn turn out SHIFT STOP ADJUSTING SCREW (2). If the lower case letters are higher than the capital case letters NnNn turn in SHIFT STOP ADJUSTING SCREW (2). Tighten shift stop screw nuts after each adjustment.

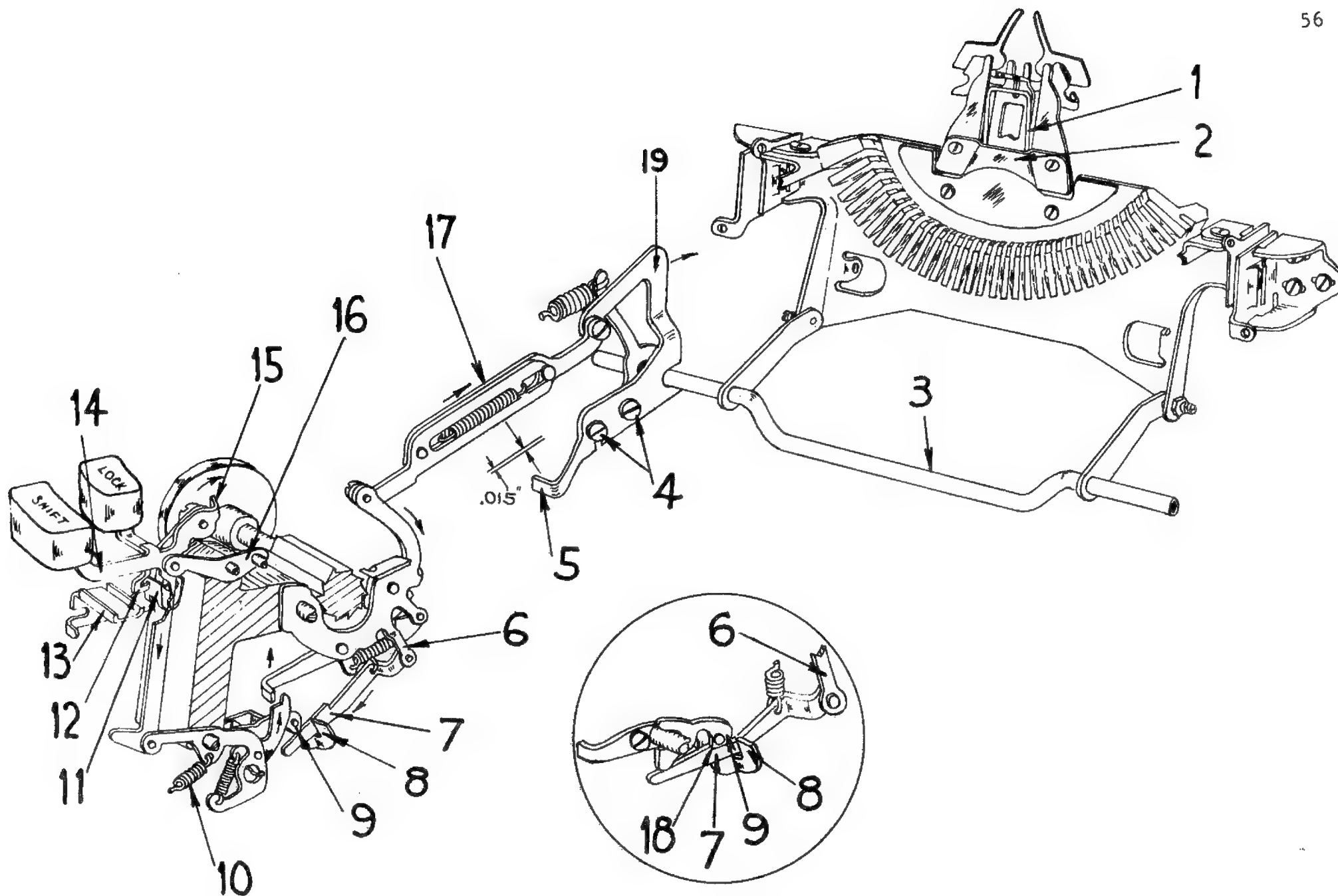


### POWER SHIFT STANDARD ADJUSTMENTS

1. Check shift segment for freeness by depressing manually. See that shift balls are neither too loose nor tight in raceways. TYPE BAR REPULSER WIRE (1) should not bind on the REPULSER DEPRESSOR (2). The SHIFT TORSION ROD (3) should be free.
2. Scribe a line across the top of the SHIFT LINK ASSEMBLY (17). The shift link assembly should separate about .010 inches in down shift or capital position. If adjustment is necessary, loosen two SHIFT LINK SCREWS (4), test feet and motion by manually operating the segment. Apply forward pressure at (19) to increase separation. Reverse to decrease separation.
3. SHIFT LEVERS (14) and SHIFT BAIL (16) should be free on pivot screws and restore to rest position after shift key is depressed. If they are free and still fail to restore, check tension SHIFT LEVER SPRING (10). Replace if necessary.
4. To insure accurate power shift adjustments, we recommend removing casing jackets and test shift mechanism manually by depressing shift key and turning power roll pulley by hand.
5. The SHIFT LATCH (7) should be aligned with the SHIFT LATCH DOG (9). When tested manually as mentioned above, the SHIFT LATCH (7) should over latch the Latching Face (18) of the SHIFT LATCH DOG (9) about .010 inches. To increase travel, place twister ST1582 on Lower ACTUATOR ARM (6) and bend forward. Reverse to decrease travel. The SHIFT LATCH (7) should be free in the SHIFT LATCH bracket (8).







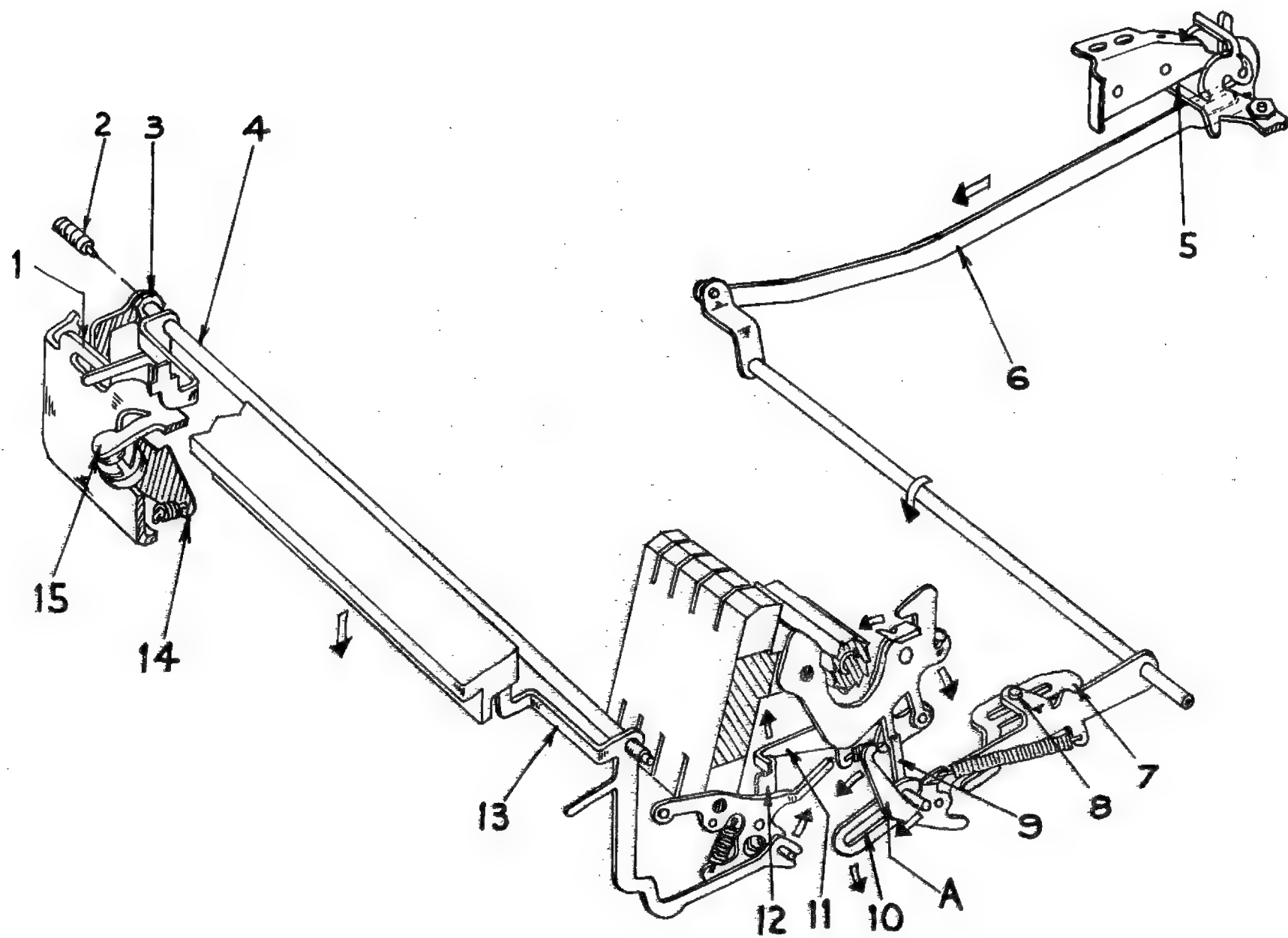
### POWER SHIFT STANDARD ADJUSTMENTS (con't)

6. When shift mechanism is locked in down shift position, there should be about .015 inches clearance between SHIFT LINK (17) and SHIFT LINK ARM (5). The SHIFT LINK ARM (5) may be adjusted up or down as required. Test by pushing shift link down to see that shift linkage does not go past center and restores properly.
7. With switch on, test shift slow and fast. If shift bounces, adjust SHIFT LEVER OVERTHROW STOP (15) down.
8. SHIFT LOCK (12) should by-pass SHIFT LOCK BRACKET (11) about .020 before returning to lock position. SHIFT LOCK (12) should by-pass REPEAT BAIL (13) with no interference.
9. To test the SHIFT LOCK (12) and SHIFT LEVER OVERTHROW STOP (15), turn power off, lock shift lock, (while still in lower case). Turn switch on, segment should assume capital case position. If it does not, readjust SHIFT LOCK (12) or SHIFT LEVER OVERTHROW STOP (15).

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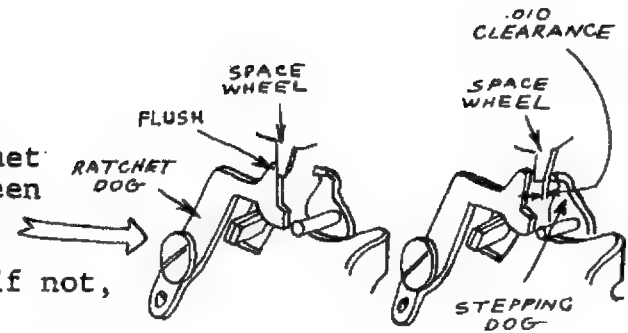
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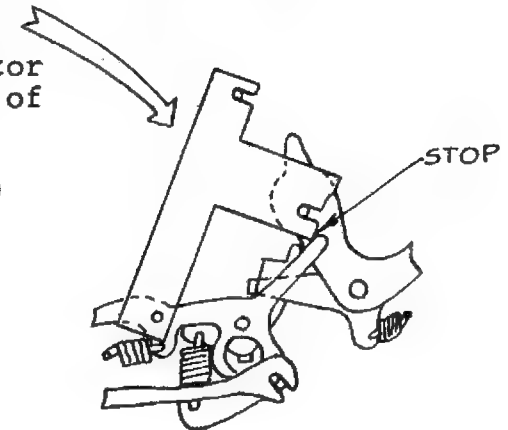
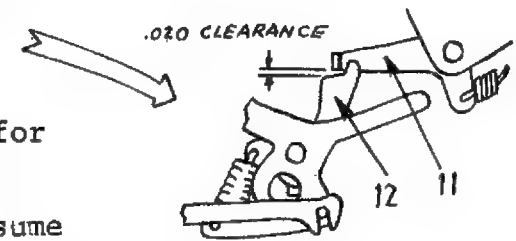


## POWER SPACE BAR ADJUSTMENTS

Before making any space bar adjustments, make certain the ratchet dog is flush with space wheel and there is .010 clearance between the stepping dog and space wheel teeth as illustrated.



1. SPACE BAR SHAFT ASSEMBLY (4) must be free on its pivots. If not, loosen NUT (3), turn out SCREW (2).
2. Adjust STOP (15) so there is .020 clearance between SPACE BAR LINK REPEAT (12) and POWER ACTUATOR BELLCRANK (11).
3. Adjust space bar to trip approximately .040 before contacting SPACE BAR STOP (14). Adjust STOP (1) forward or to the rear for this adjustment.
4. Additional travel causes power actuator and repeat link to assume this position. Repeat adjustment same as key action.
5. Raise machine front up, power off. Move ARM (9) of power actuator forward, escapement should trip when it reaches near the center of SLOT (10). If it trips past center, shorten FORM (6) of space bar link for quicker escapement trip. Lengthen FORM (6) for later trip. Make certain rest position of ESCAPEMENT ROCKER (5) has not changed.
6. Adjust ARMS (13) to align space bar with mask.
7. Loosen SCREW (8). Slide BRACKET (7) to the rear for faster space bar repeat. Reverse to slow action.
8. Arm (A) must have up tension and be safely on stud, if not machine will tie up.

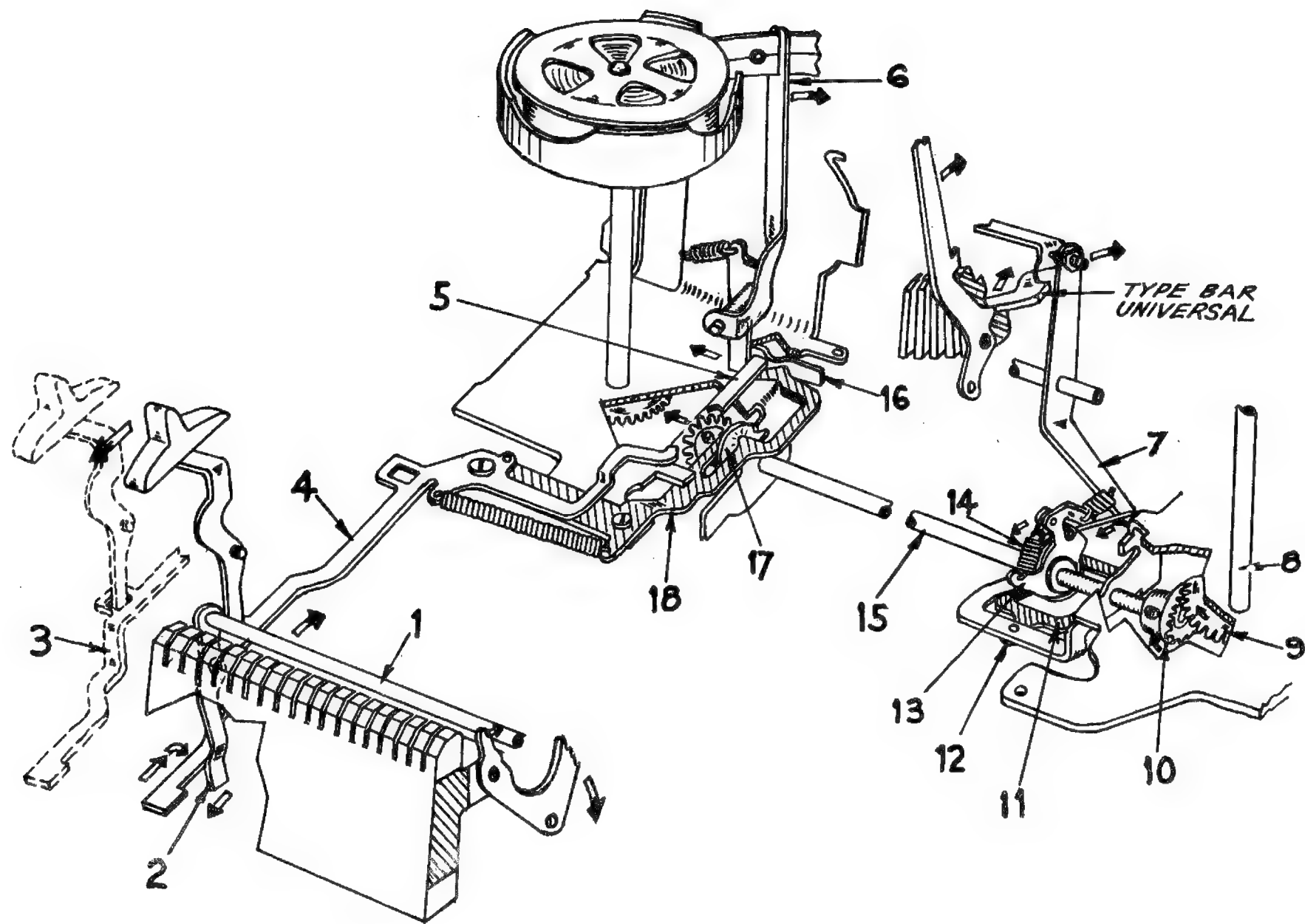


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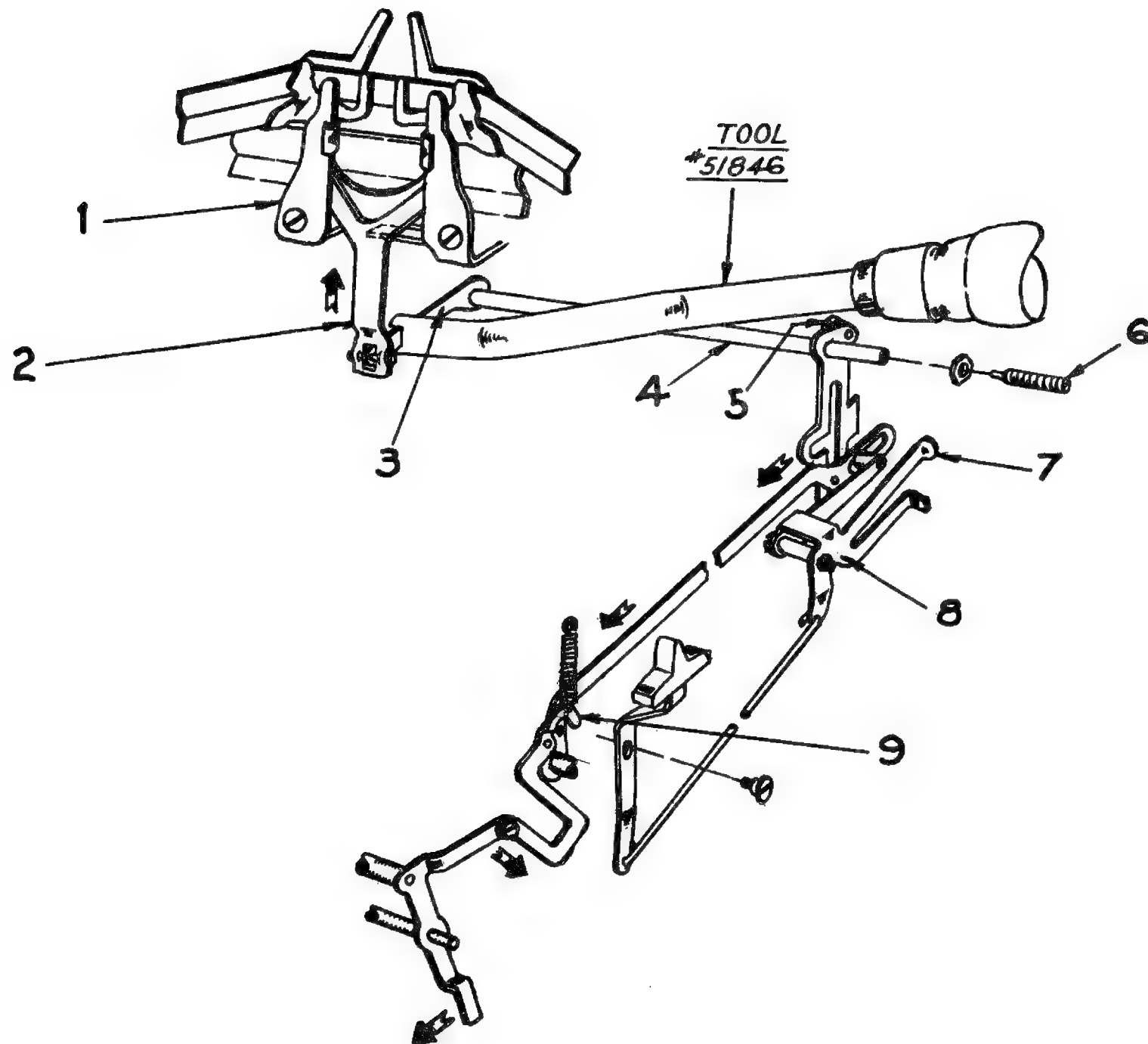


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## RIBBON FEED - RIBBON REVERSE

As drawing indicates, ribbon feed is powered by type bar universal through the type bar universal rocker shaft. Therefore, related parts should be free on their pivot points.

1. Position the RIBBON SPOOL DRIVE SHAFT GEARS (9) low enough so they will have a little up and down play on the DRIVE SHAFT (8), at least .007.
2. The feed SHAFT GEARS (10) should be positioned on the RIBBON FEED SHAFT (15) about 1/16" from the ends. RIBBON SHAFT GEARS (10) and RIBBON DRIVE GEARS (9) must mesh properly, but not too deep to bind.
3. The RIBBON FEED RATCHET WHEEL (13) should be set so when the ribbon is feeding to the right, it will just clear the right side of the RIBBON FEED RETAINING PAWL (11).
4. There should be a little side play between FLANGE (17) and left REVERSE FORK (18). Open fork to increase play, close to decrease play.
5. The tension of the FEED RETAINING PAWL (11), must be strong enough to prevent turning the RIBBON FEED RATCHET WHEEL (13) backward. Adjust RETAINING PAWL (11) by moving it forward or backward on SCREW (12).
6. The RIBBON REVERSE PAWL (16) should contact the LEFT RIBBON REVERSE FORK (18) at all times. See that it does not rub on the machine frame. This pawl may be adjusted sideways for centering on FORK (18).
7. See that the RIBBON FEED PAWL (14) is free on its rivet. If it binds, replace complete assembly. FEED PAWL (14) should take 1 to 3 notches. To make ribbon feed faster, form tip end of ARM (7) Down.
8. The RIBBON REVERSE ACTUATORS (6) must be free on their shaft screws and ribbon slots centered with the openings in the ribbon spool cups. RIBBON REVERSE TRIPS (4) must be adjusted high enough at (5) so they will not slip under the ACTUATORS (6).
9. The RIBBON UNIVERSAL (1) should have a little side play. Both REVERSE TRIPS (4) must clear ribbon universal arms during normal typing, but must contact the arms (2) as the REVERSE ACTUATORS (6) are pulled out by the metal eyelets in the ribbon. If the ARMS OF THE UNIVERSAL BAR (2) fail to carry the REVERSE TRIPS (4) forward enough for positive reverse, shorten the trips by increasing this form (3). The ribbon may also fail to reverse if the ribbon universal carries the REVERSE TRIPS (4) too far forward.



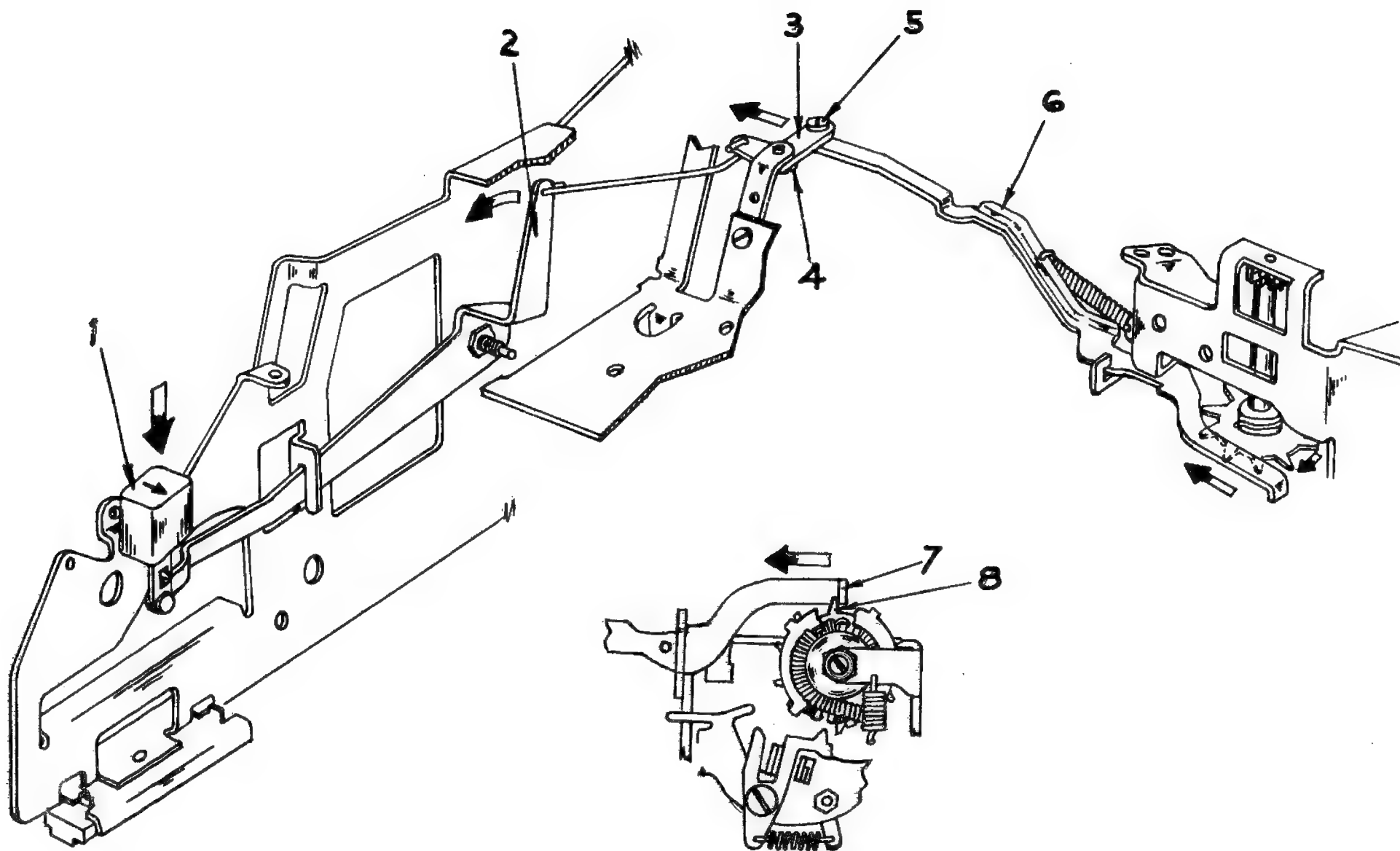
### RIBBON THROW ADJUSTMENT

1. The VIBRATOR (2) must be adjusted so the ribbon in rest position does not obstruct the view of the printed underscore, but no lower.
2. VIBRATOR (2) must be free on BRACKET (1). VIBRATOR SHAFT (4) should have slight end play on ADJUSTING SCREW (6) to permit free movement.
3. Adjust height of VIBRATOR by raising or lowering ARM (3) as illustrated. NEVER loosen ADJUSTING SCREW (5).
4. If the RIBBON THROW LINKAGE should lock, in raised position when a key is struck for capitals in red, bend ARM (9) down.
5. Adjust RIBBON COLOR SHIFT BELLCRANK ASSEMBLY (8) so that ARM (9) enters locating holes correctly in side frame, and to detent properly.

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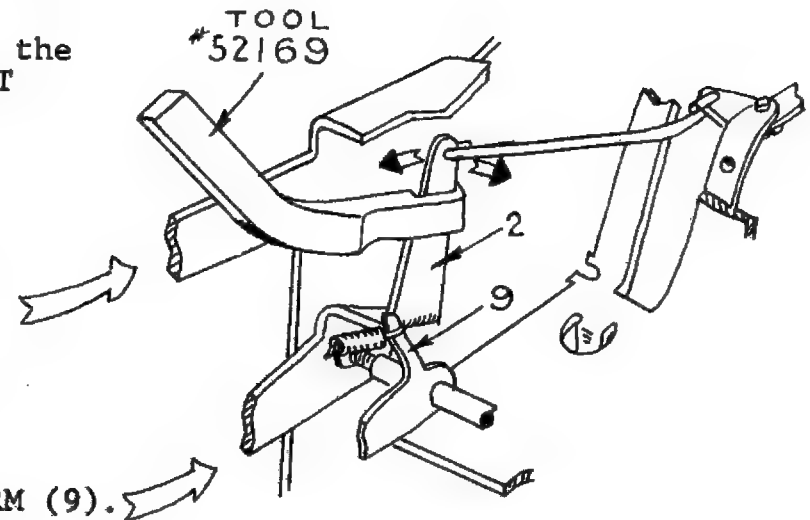
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## BACKSPACE

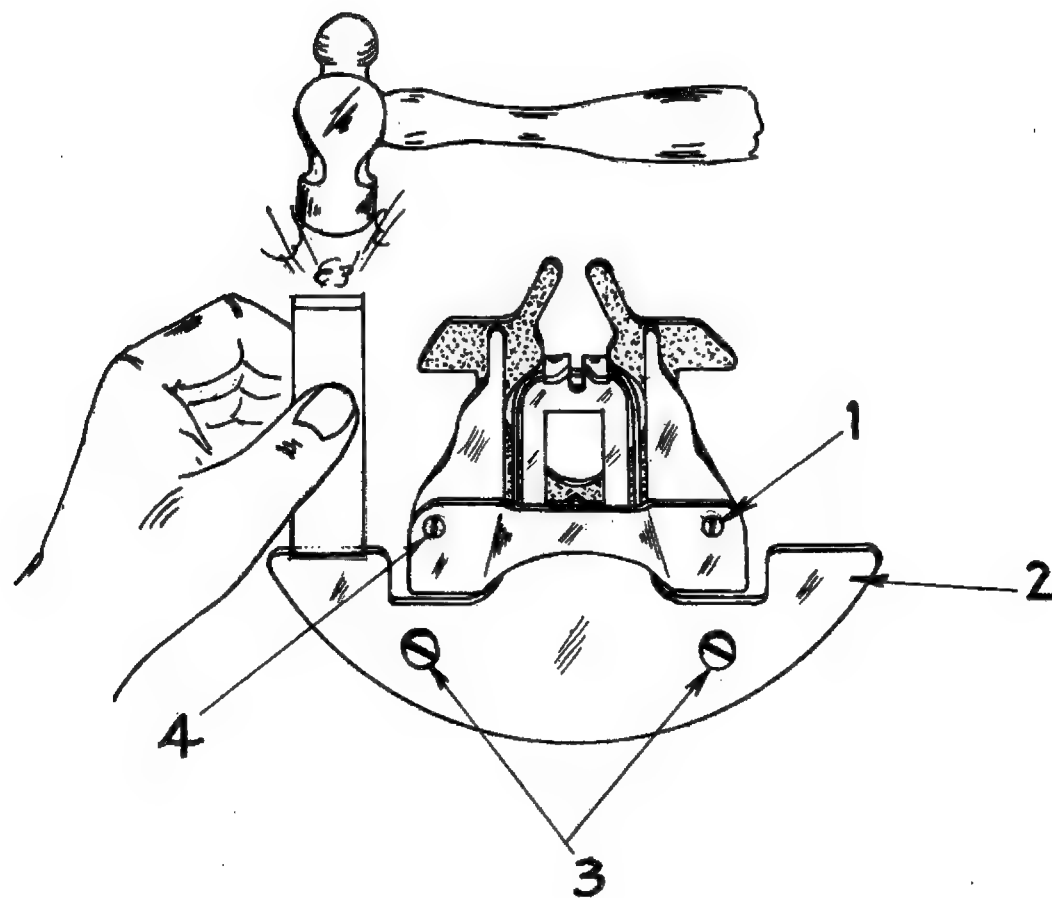
1. Backspace mechanism should restore to proper rest position after the Backspace Lever is depressed.
2. The BACKSPACE BELLCRANK (3) and the BACKSPACE ARM (6) should be free on the PIVOT SCREWS (4) and (5).
3. When the BACKSPACE KEY is depressed, the center of the BACKSPACE ARM LUG (7) should contact the ESCAPEMENT wheel tooth (8).
4. LUG (7) should be at right angle with ARM (6) and contact at least 1/3 of the STAR WHEEL TOOTH.
5. Travel of the BACKSPACE ARM (6) may be altered as illustrated. Depress BACKSPACE when adjustment is to the rear.
6. Backspace KEYBUTTON (1) must have free movement in Keylever Mask.
7. The BACKSPACE KEYLEVER (2) must clear SHIFT LINK ARM (9). Adjust ARM (9) if necessary.





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## TYPE GUIDE

### REMOVAL

Remove TYPE BAR REPULSER DEPRESSOR SCREW (1). Loosen SCREW (4) enough to permit moving the TYPE BAR REPULSER DEPRESSOR to the left to clear TYPE GUIDE (2). Relocate SCREW (1) to hold LINE INDICATOR SCREW PLATE in position. Remove TYPE GUIDE SCREWS (3).

To reset TYPE GUIDE (2), replace the above parts, leaving GUIDE SCREWS (3) loose. Strike H Bar and hold in TYPE GUIDE. Turn in GUIDE SCREWS (3) so they are snug but not tight. Type aligning sample to determine if the line of write is in alignment with the Letter (N). Tap the top side of the GUIDE evidencing low letters, As Illustrated, then tighten both GUIDE SCREWS (3).

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

## ALIGNMENT

Type alignment is the relation of the characters to one another, as they appear in the written work, the regularity of the lateral spacing, the position of the characters on the writing line, and the overall printing of the individual type.

Aligning of the type should never be done until all other adjustments are made, since almost every adjustment on the machine in some way or another will influence the alignment.

The type guide should be centered on the segment so that a number of characters such as "Q" and "P" from both extremes of the keyboard print equally on the writing line. Type bars should be free in the segment and should enter the type guide

with no interference.

The "N" is the master type in aligning. All letters are aligned to the "n" with all small letters. Compare the lower case characters. If it is found that all or most of the letters vary from the small "n" in the same direction, the small "n" should be centered first to avoid adjusting all, or nearly all, the type. With our improved method of soldering type on our type bars and our method of prealigning type in our segments, very little individual aligning of type will be necessary.

The sequence of various aligning methods and tools used are as follows:

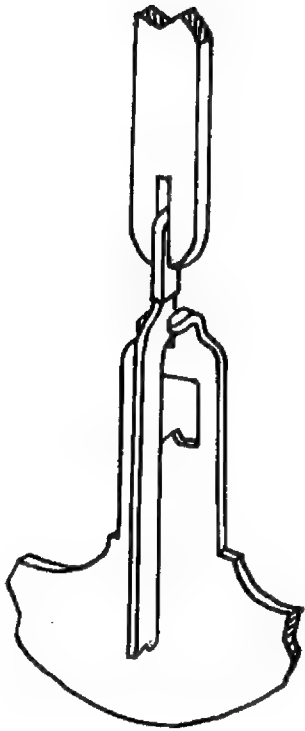


FIG. #2

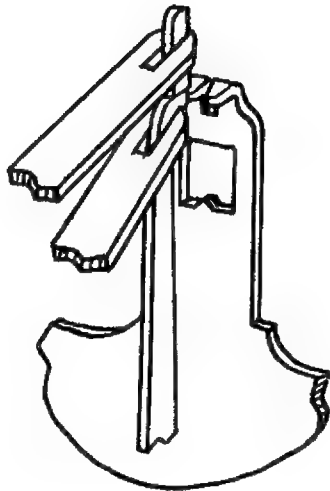


FIG. #1

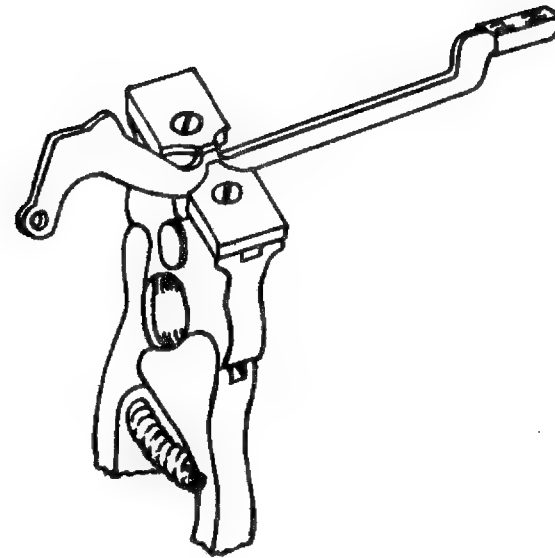


FIG. #3

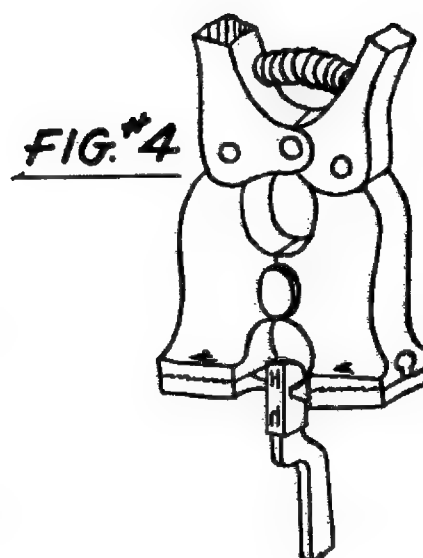
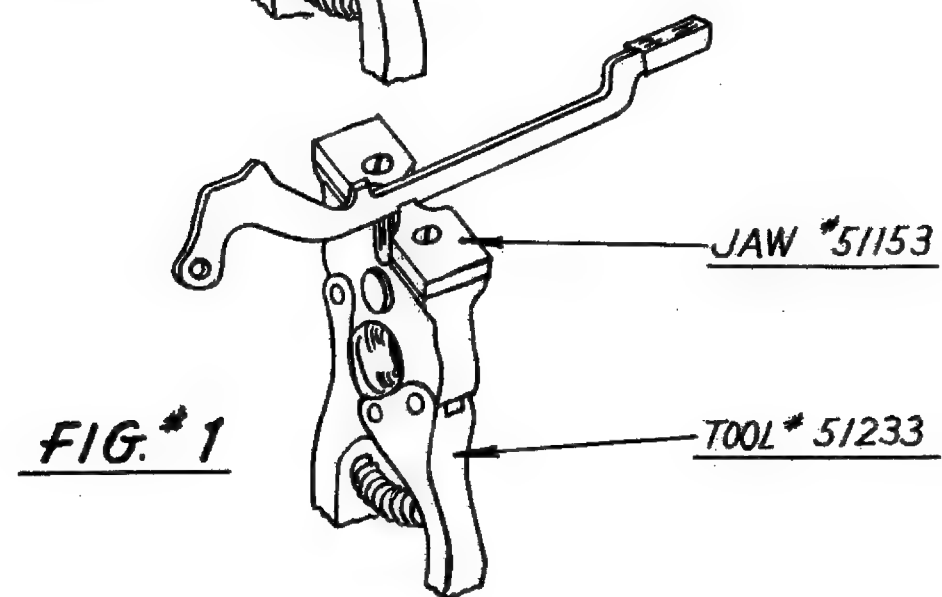
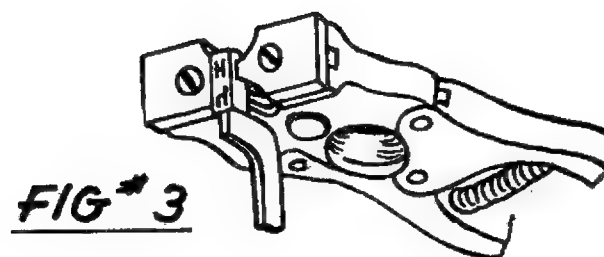
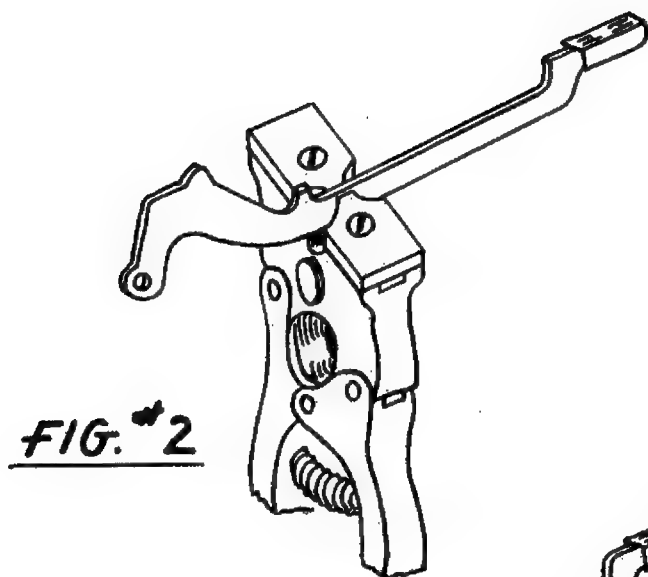
## ALIGNING

Twist the type to the left or right to overcome lightness on either side of the impression. This may be accomplished by placing the wide slot of the aligning wrench over the type, placing the narrow end of another aligning wrench over the type bar just below the type. Hold bar rigid with lower wrench and twist type in the desired direction with the upper wrench. Figure 1. Use type Wrench 52066, for vertical alignment of capital case type which is tipped to the right or left. Figure 2.

## RING & CYLINDER

The matter of clearance between the type bar hammer and the type bar segment anvil should be carefully adjusted on the first 10 and last 10 type bars. Decrease the pressure of the type bar hammer against the segment anvil by filing off the hammer slightly. Increase the type bar hammer pressure against the segment anvil by mauling the hammer with type bar maulers, 51233. When installing a new type bar segment, it will be necessary to maul the 10 end type bar hammers on both sides of the segment to relieve blurring and embossing the paper. CAUTION: If type bars are bumped too much, it could cause the machine to skip.





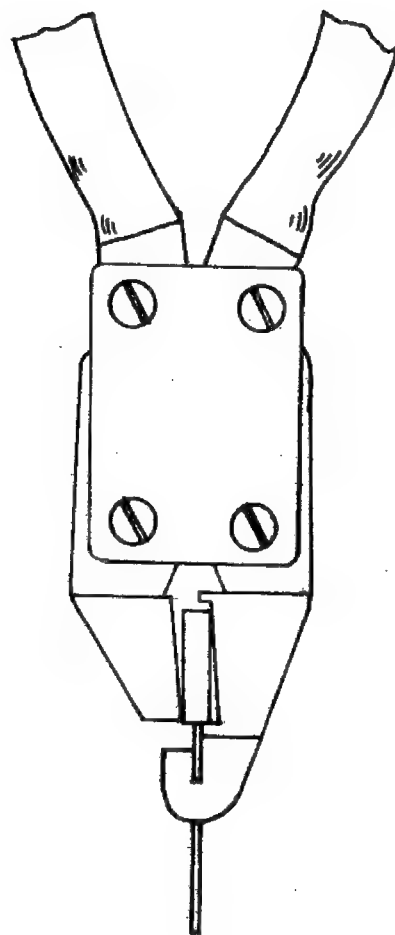
## ALIGNING

If any type prints slightly below or above the writing line, it can be adjusted with tool 51233. This tool is used on the type bar close to the type bar hammer. Mauling low on the type bar prevents raising the type bar out of the basket. This tool slightly stretches one side of the type bar. When it is applied to the rear of the bar (Figure 1) it LOWERS the character. When it is applied to the front of the bar (Figure 2) it RAISES the character. The amount of raising or lowering of the character that can be done with this tool is limited. The tool should not be applied more than three or four times, so as not to damage the type bar.

Do not use the tool too close to the edge. This will only disfigure the bar, and it will not have the desired effect. Of course, when a character is lowered with this tool, the top of the type is thrown forward, and therefore has a tendency to make the type print heavier on top. When a type is raised, it prints heavier on the bottom.

To correct light impressions, place the maulers over the type face from the back so that the mauling point of the maulers is flush with the front surface of the type block as shown in Figure 3.

New type should be resoldered if it is much too high or much too low to maul with tool 51233. Short motion type can be improved as illustrated in Figure 4.



TOOL # 51301

## ALIGNING

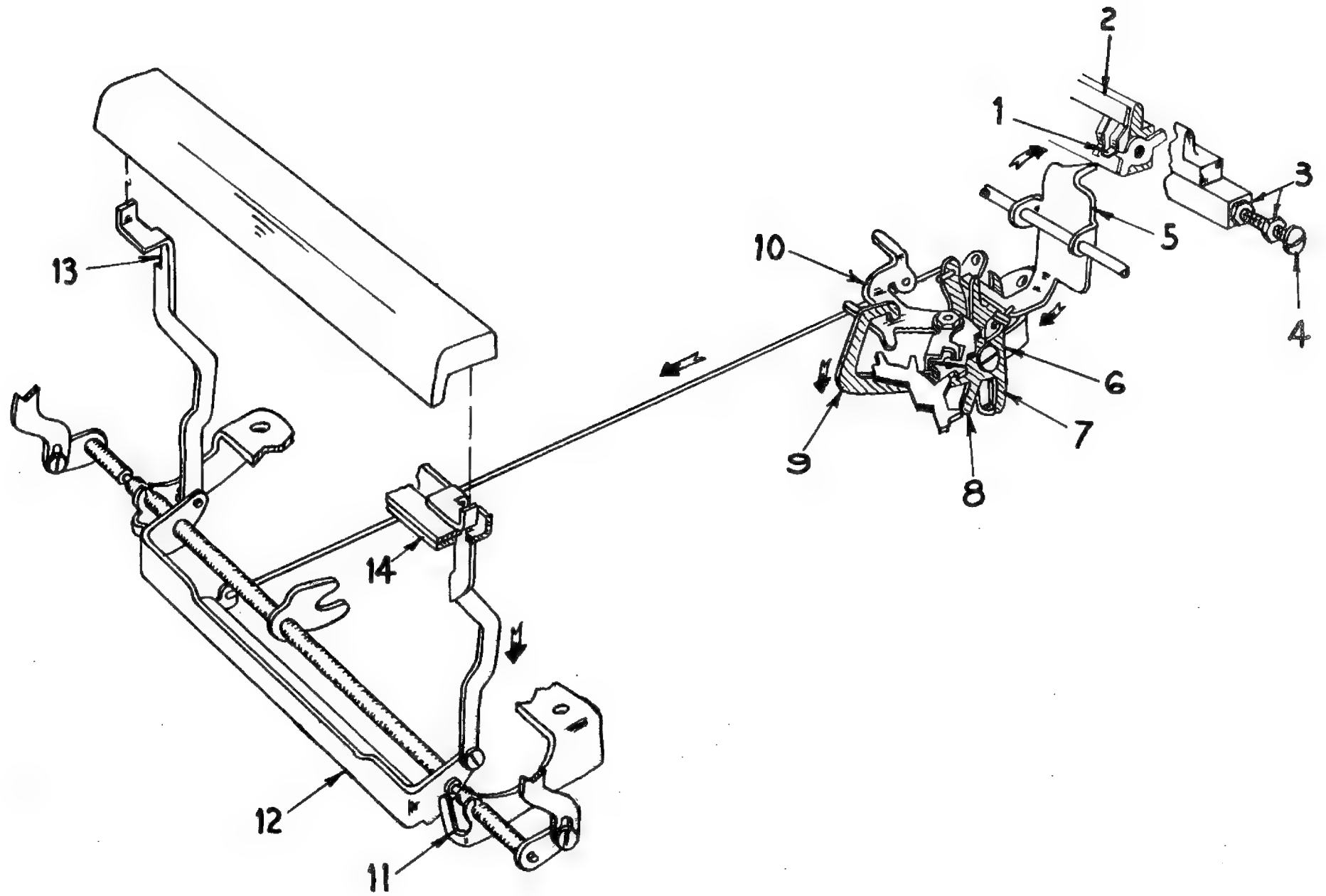
### Type Bar Offsetting Tool, #51301

The tool, #51301, is used to move the type sideways, either to the right or left, in relation to the type bar. For example, if a type prints fully and correctly, but appears either too far to the right or left, as compared with the small letter "n", the tool, 51301 must be used to bring the type to its proper position. If a small letter appears properly centered, and only the capital letter is out of alignment, use wrench, 52066, to bring the capital letter to its correct position as compared to the capital "N".

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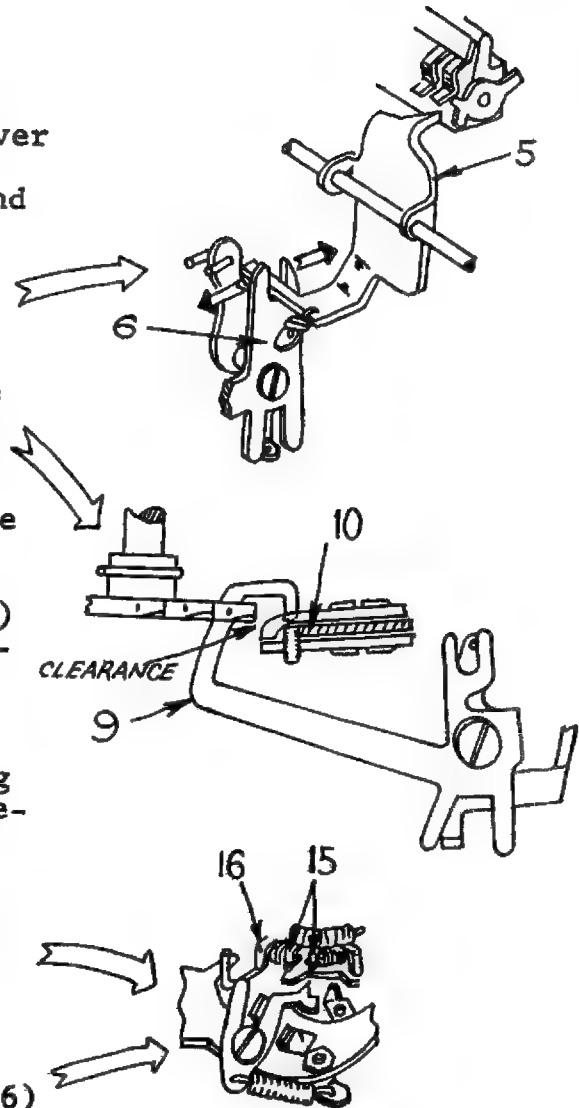
NOTES:

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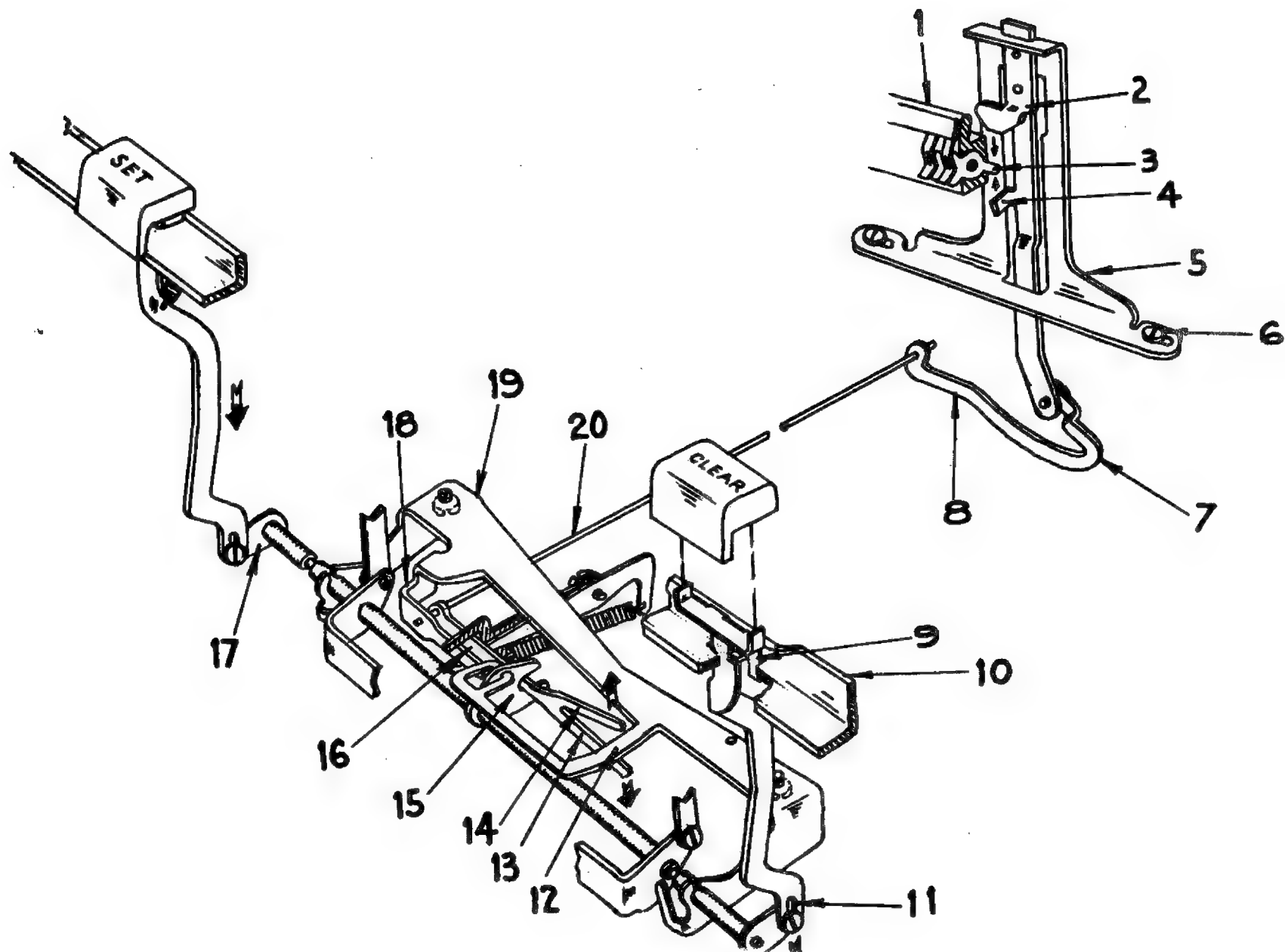


## STANDARD TABULATOR ADJUSTMENTS

1. Locate tabulator keys, right and left, between sublevers 13-14, 31-32, on 44 key machines, so there is no interference with sublever movement. Adjust STOPS (11) on keyset ACTUATOR SHAFT BRACKET for clearance. The ROCKER (12) must be free with a maximum of .015 end play on STOPS (11).
2. To increase throw of TABULATOR DOG (5) bend FORK (6) of TABULATOR BELLCRANK to the front of the machine.
3. Adjust UPPER STOP (8) on tabulator bellcrank to limit throw at the same time the tabulator ARM (9) has the escapement dogs disengaged from space wheel.
4. The ESCAPEMENT ROCKER (10) must clear TABULATOR ARM (9) when a type bar is against platen in capital case.
5. The TABULATOR KEY STOPS (13) must limit on TABULATOR KEY GUIDE (14) in rest position. If necessary, adjust LOWER STOP (7) of the tabulator bellcrank.
6. If the TABULATOR DOG fails to stop the carriage on the space the STOPS are set for, relocate TABULATOR ROD horizontally by loosening NUTS (3) and turning TABULATOR ROD SCREW in or out as required. Retighten NUTS (3).
7. When the TABULATOR DOG (5) contacts the TABULATOR STOP (1) the escapement dogs should be positioned as illustrated, slightly to the left for 12 pitch. Relocate TABULATOR ROD (2) for this adjustment.
8. Set several tabulator stops, depress both TAB and CLEAR BARS. If carriage movement is too fast while clearing stops, adjust escapement BRAKE ARMS (15) closer together. Make certain PICK UP DISC (16) is free.

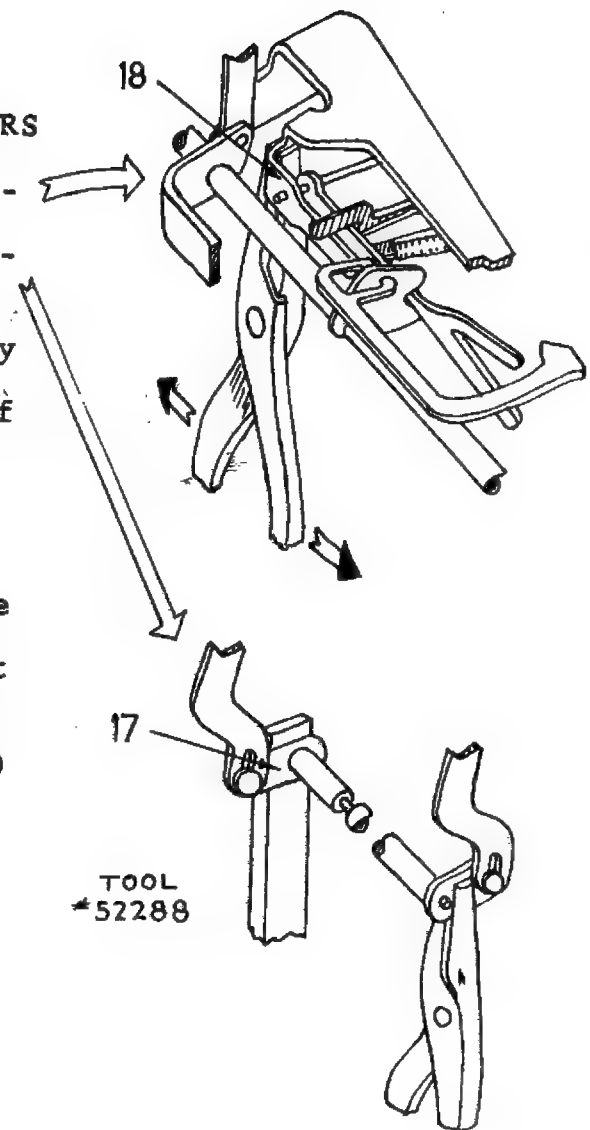






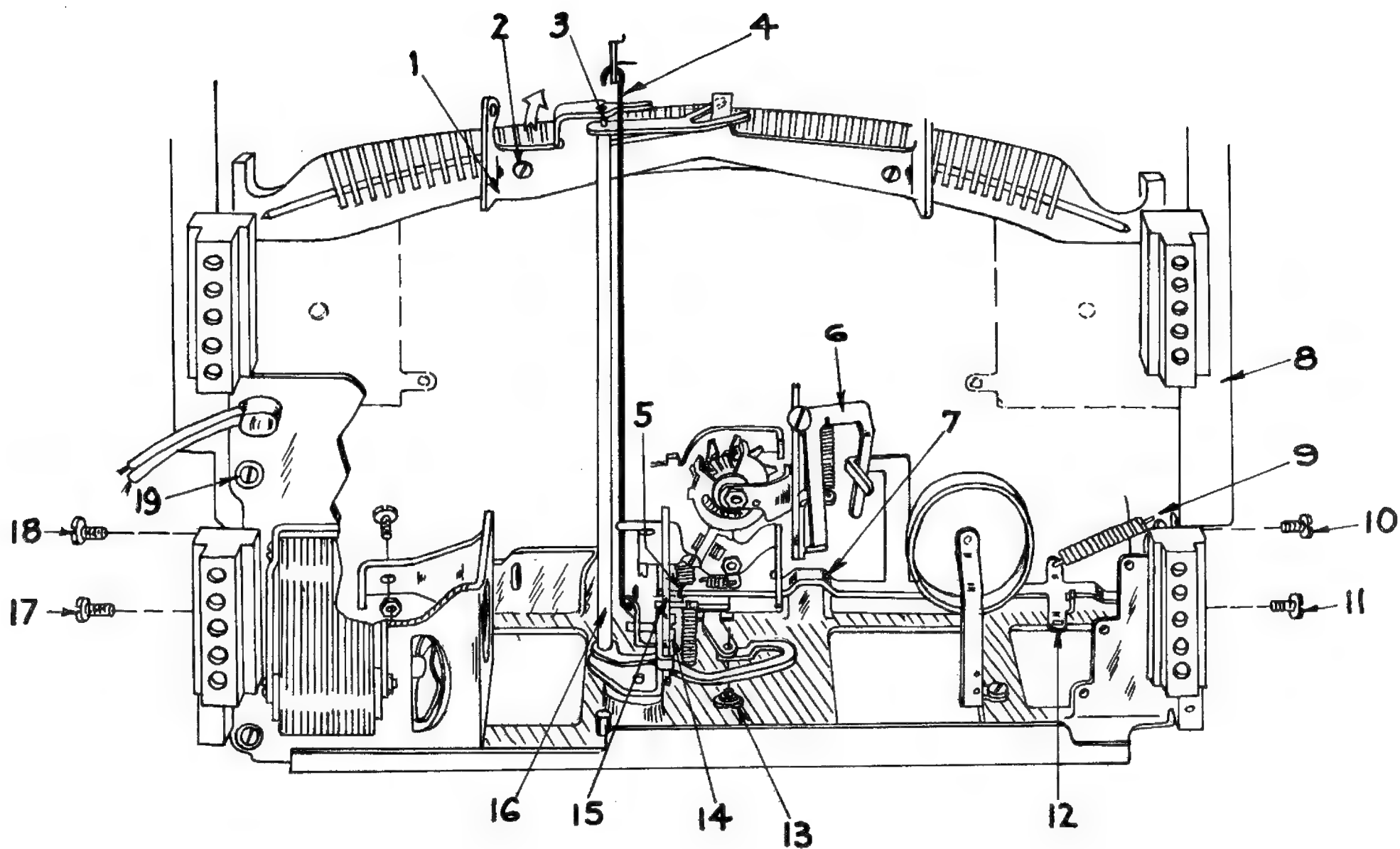
## TABULATOR SET - CLEAR ADJUSTMENTS

1. In rest position, the elongated holes in the SET and CLEAR LEVERS (11) must bottom on shoulder screws. The SET and CLEAR LEVER STOPS (9) should limit on TAB KEY GUIDE (10). If necessary, adjust ARM (18) of keyset tabulator ACTUATOR SHAFT BRACKET (19). If further adjustment is required, reform keyset tabulator actuator ARMS (17) on shaft.
2. Locate SET and CLEAR levers between 8-9, 36-37 sublevers so they do not collide. Adjust ACTUATOR SHAFT ARMS (17) sideways for clearance. Further adjustment may be made on CENTER ARM (12) of keyset tabulator ACTUATOR SHAFT BRACKET (19).
3. KEYSET TABULATOR SHAFT (20) must be free with maximum of .010 end play.
4. Adjust KEYSET TABULATOR SHAFT ARM FRONT (16) as deep as possible into keyset tabulator fork (15) and to be free on its pivot. Adjust STOP (13) to limit throw of set lever, STOP (14) to limit throw of CLEAR LEVER (11).
5. To center SET LUG (4) and clear CAM (2) with tabulator STOPS (3) open or close FORK (7) of tabulator SHAFT ARM REAR (8).
6. Adjust CLEAR CAM (2) and SET LUG (4) for proper contact with tabulator stops.
7. SET - CLEAR SLIDE BRACKET (5) may be moved horizontally by loosening bracket screws (6) to align SET LUG (4) with TABULATOR STOP (3).



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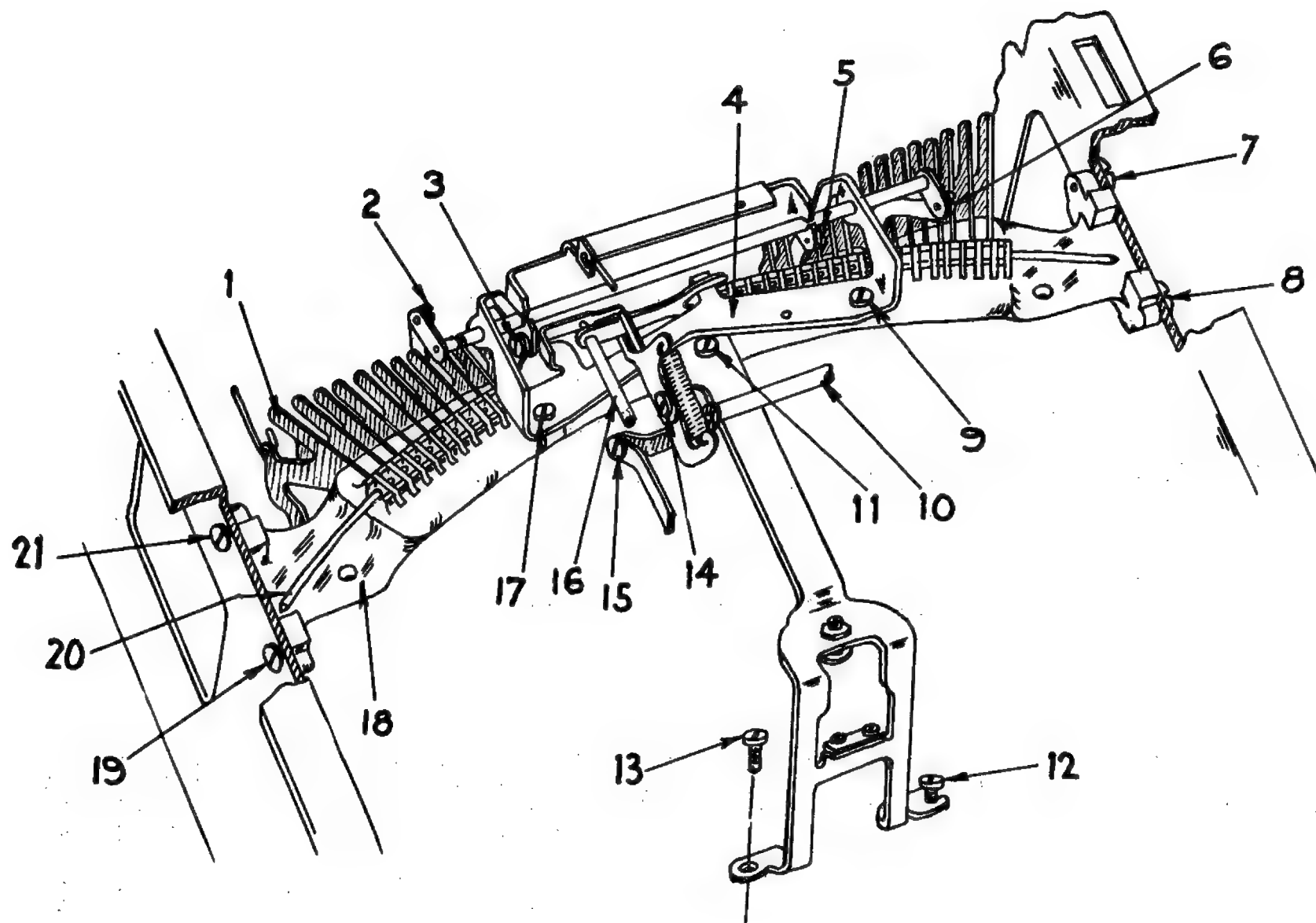
## REMOVAL OF FRAME BACK CASTING

1. Remove rear belt.
2. Unhook CARRIAGE STOP SIDE SPRING (9) from FRAME (8).
3. Unhook CARRIAGE STOP CENTER SPRING (5) from CARRIAGE STOP (7).
4. Remove FRONT MOTOR BRACKET SCREW (19).
5. Remove switch. Remove cord from GUIDE on SIDE FRAME (8).
6. Remove Key-Set Tabulator Rod.
7. Remove TABULATOR BELLCRANK SCREW (14). Unhook LINK (4). Lift TABULATOR BELLCRANK (15) out.
8. Remove TABULATOR SET SLIDE SCREW (13).
9. Loosen SCREW (2). Move BRACKET (1) forward to release PIN (3). Remove TABULATOR SHAFT (16).
10. Remove RIGHT FRAME BACK SCREWS (10) and (11). Place machine on its right side. Remove Left Back Casting SCREWS (17) and (18). Remove back Casting Assembly.

## REPLACING FRAME BACK CASTING

### REPLACE

1. Position Back Casting so the Margin Release Link enters SLOT (12) in CARRIAGE STOP (7) and so the LINE LOCK (6) straddles Carriage Stop Adjusting Finger. Replace 4 Screws.
2. Replace TABULATOR ACTUATOR SHAFT (16).
3. Replace TABULATOR BELLCRANK (15), SCREW (14) and wire LINK (4).
4. Replace TABULATOR SET SLIDE SCREW (13).
5. Replace TABULATOR ROD.
6. Replace Switch and Cord in Cord Guide.
7. Replace Front Motor Bracket SCREW (19).
8. Hook CARRIAGE STOP SPRINGS (5) and (9).
9. Replace rear belt.



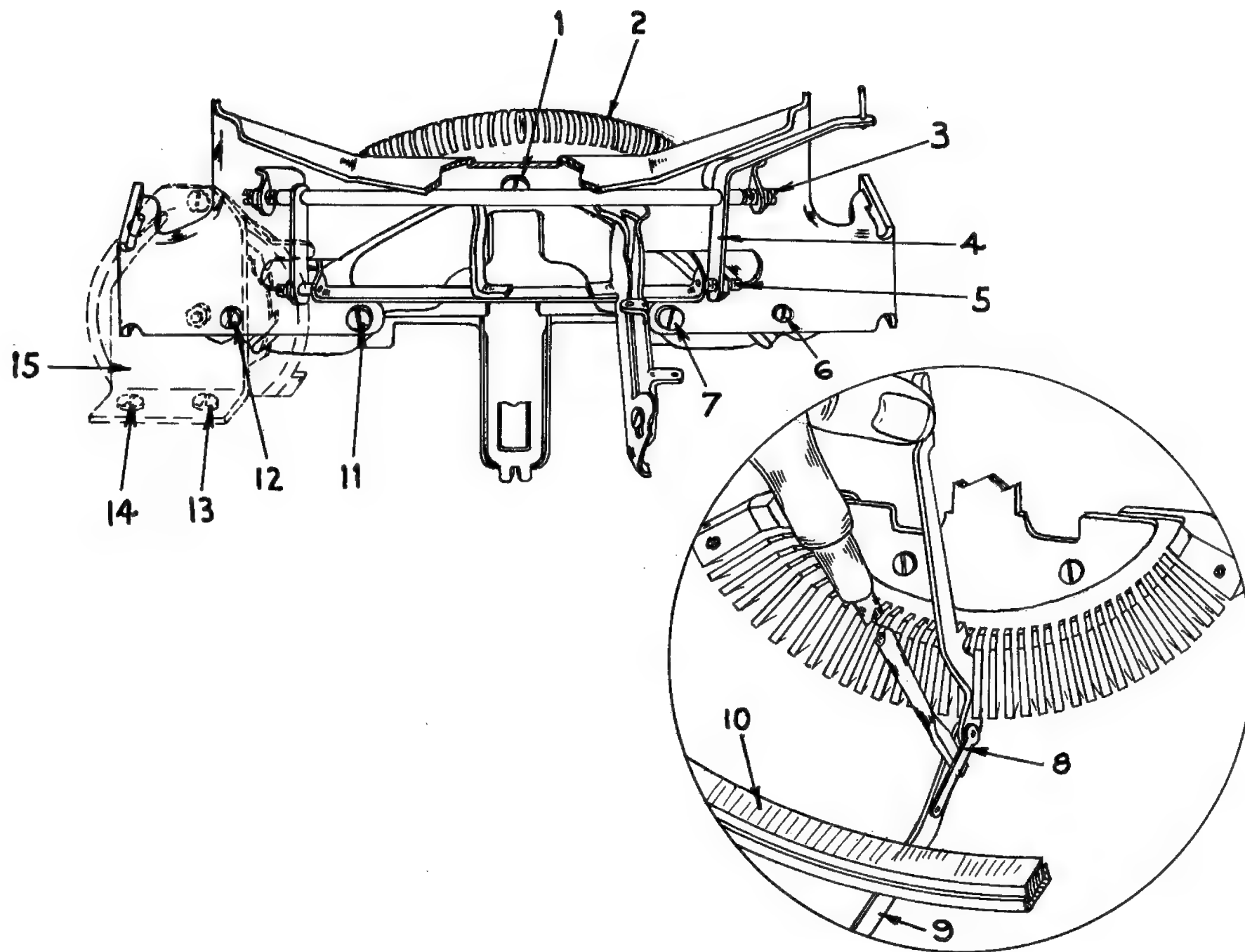
## SUBLEVER SEGMENT REMOVAL AND REPLACEMENT

1. Remove machine Casing Parts.
2. Place a heavy rubber band across Type to hold them firmly in place on the TYPE REST.
3. Tip typewriter on its back facing the bottom of the machine. Remove Tabulator Lever SCREWS (2), (3), (5) and (6). Remove SCREW (14). Remove SCREWS (9) and (17). Unhook Tabulator Link. Lift off KEYSET TABULATOR SHAFT BRACKET (4). Remove TABULATOR SHAFT (16).
4. Remove SCREW (15). Remove SPACE BAR CAM SHAFT ASSEMBLY (10).
5. Remove Upper Shift Stop Bracket SCREW (11) and Left Shift Stop Bracket SCREW (13). Loosen Right Shift Stop Bracket SCREW (12) enough to remove SHIFT STOP BRACKET.
6. Remove SUBLEVER FULCRUM WIRE (20). Remove SCREWS (7), (8), (19) and (21). Ease Sublever Segment out carefully so SUBLEVER LINKS will not be disturbed more than necessary.

## REPLACEMENT

1. Slide SUBLEVER SEGMENT (18) just far enough into position to enable you to start SUBLEVERS (1) into the slots. Make certain SUBLEVERS (1) are entering into the correct slot.
2. When all SUBLEVERS are in position, move SUBLEVER SEGMENT (18) forward into position. Replace SCREWS (7), (8), (19), and (21). Feed SUBLEVER FULCRUM WIRE (20) through each SUBLEVER (1).
3. Replace parts.





## REMOVAL AND REPLACEMENT OF TYPE BAR SEGMENT

1. Remove machine casing jackets.
2. Remove Right Repulser Depressor Screw. Pivot Repulser Depressor to the Left past the Type Guide. Relocate the Screw.
3. Do not remove TYPE REST (10). The TYPE REST will keep the TYPEBAR LINKS (9) in position.
4. Remove Spring Cord from slot. Remove SPRING DRUM SCREWS (13) and (14). Lift out SPRING DRUM ASSEMBLY (15).
5. Unhook TYPEBAR LINKS AT (8) from TYPE BAR with a small blade screwdriver, as illustrated, or pointed pliers. Start from left to right. Use caution not to destroy the Link Spring tension.
6. Loosen LOCK NUTS and turn out both UPPER (5) and LOWER (3) RIGHT UNIVERSAL SHAFT PIVOT SCREWS just far enough to let the right side of the UNIVERSAL SHAFT ASSEMBLY (4) drop free, so the CENTER TYPEBAR SEGMENT SCREW (1) can be removed.
7. Lock Shift in Capital case position.
8. Remove Segment SCREWS (6), (7), (1), (11) and (12). Lift out SEGMENT (2) from top of the typewriter.

## REPLACEMENT

### Reverse Removal Procedure

- A. To hook TYPEBAR LINKS (8) turn on Switch, depress keylever and with pointed pliers, while the linkage is broken, raise the LINK up and over the Typebar to be hooked. Linkage may also be broken by manually holding POWER ACTUATORS down.
- B. The Type on the bar which is being hooked, should be held against the platen for the Left Side Links, hold the adjacent Left Type Bar up within a 1 1/2" from the platen. This gives you room to hook the links. For the Type Bars on the Right Side starting with the H, hold the Type Bar being hooked against the platen and raise the adjacent bar on the Right to 1 1/2" from the Platen.

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## RECOMMENDED OILING PROCEDURE

### OIL THE FOLLOWING PARTS WITH A-00 NON FLUID OIL:

Backspace key - at pivot hole and at fork on frame  
Escapement rack - on teeth  
Ribbon spool shaft assembly - top under cups & upper side of frame bracket.  
Margin release lever link - both ends  
Margin rod - along entire rod (wipe to leave thin film)  
Carriage release levers - at contact with carriage ends  
Color shift bellcrank - at contact with side frame  
Color shift bellcrank screw - screw shoulder  
Color Shift lever screw - shoulder  
Ribbon reverse lever screw - shoulder  
Ribbon reverse detent - at contact with ribbon reverse fork L. H.  
Typebar universal fulcrum screw - 4 Pivot points  
Sublevers - at fulcrum points, at contact with typebar links and at contact with sublever links

### OIL THE FOLLOWING PARTS WITH #7 SPINDLE OR WHITE ROSE OIL:

Shift lock - on pivot & contact with bracket  
Carriage roller truck assembly - on all rollers  
Ribbon feed ratchet assembly

### OIL THE FOLLOWING PARTS WITH #200 SILICONE OIL:

Sublever links - at contact with power roll actuators  
Power actuator assembly - all moving parts - dogs, snaps, bellcrank, etc.

### OIL THE FOLLOWING PARTS WITH #4 TYPEWRITER OIL:

Sublever segment - across slot  
Ribbon feed shaft - two bearings  
Typebar link pin - front at connection with typebars  
Carriage stop - contact on shaft & R. H. end in frame back  
Two ribbon reverse fork screws - screw shoulders  
Two ribbon reverse trip screws - screw shoulders

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RECOMMENDED OILING PROCEDURE (Con't)

OIL THE FOLLOWING PARTS WITH #4 TYPEWRITER OIL:

Margin release lever - in slot and on lower rivet  
Margin release lever link - at each end  
Margin release lever bellcrank - bearing on side frame & screw shoulder

OIL THE FOLLOWING PARTS WITH #6 GULF GUN OIL:

Sublever assemblies  
Ribbon feed shaft & two feed gear assemblies  
Ribbon Feed gear left and right assembly  
Shift Stop bracket  
Ribbon feed retaining pawl  
Ribbon feed link  
Ribbon reverse fork left and right  
Bell hammer arms assembly  
Carriage stop  
Shift torsion shaft assembly  
Color shift bellcrank assembly  
Margin Release Lever Link